Panasonic

Operating Instructions
Blu-ray Disc™ Player / HDD Recorder

Model No. **DMR-PWT500**

Dear customer

Thank you for purchasing this product. For optimum performance and safety, please read these instructions carefully.
Before connecting, operating or adjusting this product, please read the instructions completely.
Please keep this manual for future reference.

- **This Blu-ray Disc Player / HDD Recorder is for viewing and recording free to view channels only. It does not receive pay TV or encrypted channels.**
- **The titles recorded onto the HDD of this unit cannot be copied to the media.**

- **DVB and the DVB logos are trademarks of the DVB Project.**

■ **Region management information**

BD-Video: This unit plays BD-Video marked with labels containing the region code **"B"**.

Example:

DVD-Video: This unit plays DVD-Video marked with labels containing the region number **"4"** or **"ALL"**.

Example:

Safety precautions

WARNING

■ Unit

- To reduce the risk of fire, electric shock or product damage,
  - Do not expose this unit to rain, moisture, dripping or splashing.
  - Do not place objects filled with liquids, such as vases, on this unit.
  - Use only the recommended accessories.
  - Do not remove covers.
  - Do not repair this unit by yourself. Refer servicing to qualified service personnel.
  - Do not let metal objects fall inside this unit.
  - Do not place heavy items on this unit.

■ AC mains lead

- To reduce the risk of fire, electric shock or product damage,
  - Ensure that the power supply voltage corresponds to the voltage printed on this unit.
  - Insert the mains plug fully into the socket outlet.
  - Do not pull, bend, or place heavy items on the lead.
  - Do not handle the plug with wet hands.
  - Hold onto the mains plug body when disconnecting the plug.
  - Do not use a damaged mains plug or socket outlet.
- Install this unit so that the AC mains lead can be unplugged from the socket outlet immediately if any problem occurs.

■ SD card

- Keep the Memory Card out of reach of children to prevent swallowing.

CAUTION

■ Unit

- This unit utilizes a laser. Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.
- Do not place sources of naked flames, such as lighted candles, on this unit.
- This unit may receive radio interference caused by mobile telephones during use. If such interference occurs, please increase separation between this unit and the mobile telephone.
- This unit is intended for use in moderate climates.

■ Placement

- Place this unit on an even surface.
- To reduce the risk of fire, electric shock or product damage,
  - Do not install or place this unit in a bookcase, built-in cabinet or in another confined space. Ensure this unit is well ventilated.
  - Do not obstruct this unit's ventilation openings with newspapers, tablecloths, curtains, and similar items.
  - Do not expose this unit to direct sunlight, high temperatures, high humidity, and excessive vibration.

■ Batteries

- Danger of explosion if battery is incorrectly replaced. Replace only with the type recommended by the manufacturer.
- Mishandling of batteries can cause electrolyte leakage and may cause a fire.
  - Do not mix old and new batteries or different types at the same time.
  - Do not heat or expose to flame.
  - Do not leave the battery(ies) in a car exposed to direct sunlight for a long period of time with doors and windows closed.
  - Do not take apart or short circuit.
  - Do not recharge alkaline or manganese batteries.
  - Do not use batteries if the covering has been peeled off.
  - Remove batteries if you do not intend to use the remote control for a long period of time. Store in a cool, dark place.
- When disposing the batteries, please contact your local authorities or dealer and ask for the correct method of disposal.

Features

■ 3D video and 3D photo playback (⇨ 43, 54)

3D videos and 3D photos can be played back when this unit is connected to a 3D compatible TV using a High Speed HDMI Cable and 2D video can be enjoyed as 3D virtually.

■ Wireless connection (⇨ 14, 21)

This unit supports Wi-Fi technology and it is possible to make a wireless connection by using a built-in Wireless LAN Adaptor.

■ DLNA (⇨ 70, 71)

You can enjoy the video and photos saved on the HDD of this unit on DLNA (Client) compatible equipment connected via a network. Additionally, you can enjoy viewing video, photos and music saved on a DLNA Certified media server and Panasonic DLNA compatible recorders.

■ VIERA CAST (⇨ 67)

Internet services (such as YouTube, Picasa Web Albums, video communication, etc.) can be accessed easily by using the VIERA CAST button.

■ EPG (⇨ 26, 31)

Timer recording is made easier because the TV Guide allows you to see programme information.

The recording and playback of content on this or any other device may require permission from the owner of the copyright or other such rights in that content. Panasonic has no authority to and does not grant you that permission and explicitly disclaims any right, ability or intention to obtain such permission on your behalf. It is your responsibility to ensure that your use of this or any other device complies with applicable copyright legislation in your country. Please refer to that legislation for more information on the relevant laws and regulations involved or contact the owner of the rights in the content you wish to record or playback.

Supplied accessories

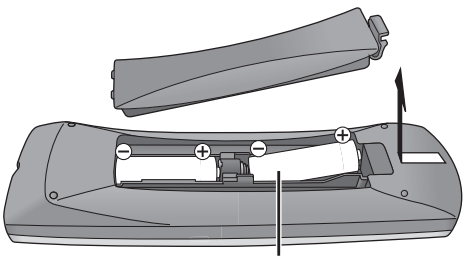
Please check and identify the supplied accessories.
(Product numbers correct as of February 2011. These may be subject to change.)

1 Remote control
(N2QAYB000611)
2 Batteries for remote control
1 AC mains lead
- Do not use AC mains lead with other equipment.

1 RF coaxial cable
1 Audio/Video cable

Using the remote control

Insert so the poles (+ and −) match those in the remote control.



R6/LR6, AA

- Use alkaline or manganese batteries.

Point it at remote control signal sensor on this unit. (⇨ 11)

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About descriptions in these operating instructions
● Pages to be referred to are indicated as "⇨ ○○".

HDD and media information

Discs

(◯: Possible, –: Impossible)

Disc type	Standard symbol	Playable contents	Recordable
Hard disk drive (HDD)	HDD	Video (Including AVCHD) Photo (JPEG/MPO) Music (MP3)	◯
BD-Video	BD-V	High Definition (HD) movie and music discs ● Information for High Bit Rate Audio (⇨ 101) ● 3D videos can be played back when this unit is connected to a 3D compatible TV using an HDMI cable.	–
BD-RE DL/ BD-RE (50 GB/25 GB)	BD-RE	Video (Including AVCHD) Photo (JPEG/MPO)	–
BD-R DL/BD-R (50 GB/25 GB)	BD-R	Video (Including AVCHD)	–
		Video (DivX® and MKV)	–
DVD-Video	DVD-V	Movie and music	–
DVD-R **DVD-R DL**	-R -R DL	Video (Including AVCHD)	–
		Video (DivX® and MKV) Photo (JPEG/MPO) Music (MP3)	–
DVD-RW	-RW(V)	Video (Not including AVCHD)	–
DVD-RW (DVD Video Recording format)	-RW(VR)	DVD-RW video recorded on another DVD recorder	–

Disc type	Standard symbol	Playable contents	Recordable
+R	+R	Video (Not including AVCHD)	–
+R DL	+R DL		
+RW	+RW		
BD-RE, BD-R, DVD-R, DVD-R DL, DVD-RW, +R, +R DL, +RW	BD-R BD-RE -R -R DL -RW(V) +R +R DL +RW	High Definition video recorded by Panasonic video camera, etc.	–
CD (including CD-R/RW)	CD	Music (CD-DA)	–
CD (including CD-R/RW)	CD	Video (DivX® and MKV) Photo (JPEG/MPO) Music (MP3)	–

- It may be necessary to finalize the disc or close the session on the equipment used for recording to play on this unit.
- The DVD-R, DVD-R DL, DVD-RW, +R, and +R DL after the finalisation are referred to as "DVD-V" in these operating instructions.
- The producer of the disc can control how discs are played. So you may not always be able to control play as described in these operating instructions. Read the disc's instructions carefully.
- With certain recording states and folder structures, the play order may differ or playback may not be possible.
- Operation and sound quality of CDs that do not conform to CD-DA specifications (copy control CDs, etc.) cannot be guaranteed.

Recording mode

Recording Mode	DR	HG/HX/HE/HL/HM	XP/SP/LP/EP, FR
Feature (Quality)	Programmes can be recorded in a nearly perfect broadcasted state.	Recording can be done with reduced recording volume in HD quality.※1	Quality will be in SD quality even if a programme in HD quality is recorded
Multiple audio (audio language)	Record all multiple audio	Record only one audio	
Subtitles	Can be recorded	Can be recorded※2	
Surround audio	Surround audio as the broadcast	Depends on the settings (⇨ 79, Audio Type for Digital Broadcast, Audio for HG / HX / HE / HL / HM Recording)	Stereo audio

※1 The SD quality programme can not be converted to HD quality.

※2 You cannot select during play whether it appears or disappears.

➢ **Recording modes and approximate recording times (⇨ 103)**

Notes for the disc

■ Discs that cannot be played

- DVD-RAM
- DVD-Audio
- HD DVD
- WMA discs, DivX Plus HD discs
- Super Video CD, Super Audio CD, Video CD
- +R (8 cm), CD-ROM, Photo CD, PD, etc.

SD cards

Standard symbol	Contents
SD	Photo (JPEG/MPO) AVCHD MPEG2 (Copy only)

Compatible SD card

– SD Memory Card (from 8 MB to 2 GB)
– SDHC Memory Card (from 4 GB to 32 GB)
– SDXC Memory Card (48 GB, 64 GB)
This unit is compatible with SD Memory Cards that meet SD Card Specifications FAT12 and FAT16 formats, as well as SDHC Memory Cards in FAT32 format and SDXC Memory Cards in exFAT format.

- Useable memory is slightly less than the card capacity.
- If the SD card is formatted on other equipment, the time necessary for recording may be longer. Also, if the SD card is formatted on a PC, you may not be able to use it on this unit. In these cases, format the card on this unit (⇨ 65).
- SDHC Memory Cards and SDXC Memory Cards can be used in equipment that is compatible with the appropriate cards. (SDHC Memory Cards can also be used in equipment compatible with SDXC Memory Cards)
Using either of these cards in a non-compatible PC or non-compatible equipment may result in formatting etc. and the loss of recorded content.

■ Setting the protection

Switch the write-protect switch to the “LOCK” position.

■ Using miniSD card or microSD card

Mini-type and micro-type cards can also be used, but must be used with adaptor cards. These are usually supplied with such cards, or otherwise customer provided.

e.g.,

USB memories

Standard symbol	Contents
USB	DivX (Play only)※ MKV (Play only) Photo (JPEG/MPO) MP3 AVCHD (Copy only) MPEG2 (Copy only)

※ Video images of the copyright-protected DivX contents stored on USB device can be output only through the HDMI output terminal.

Compatible USB memories

- USB memories that support USB 1.0/1.1 and USB 2.0 Full Speed/High Speed.
- FAT16 and FAT32 file systems are supported.

- This unit’s USB port does not support bus-powered USB device.
- Despite meeting the conditions mentioned above, there may be USB memories that cannot be used for this unit.
- This unit supports connecting a USB memory, digital camera and video camera produced by Panasonic, etc. It is not warranted that all USB devices will meet this unit.
- USB memories support DivX and MKV files less than 4 GB.
- USB port at the rear of this unit is dedicated for optional Communication Camera (TY-CC10W or compatible equipment).

Notes

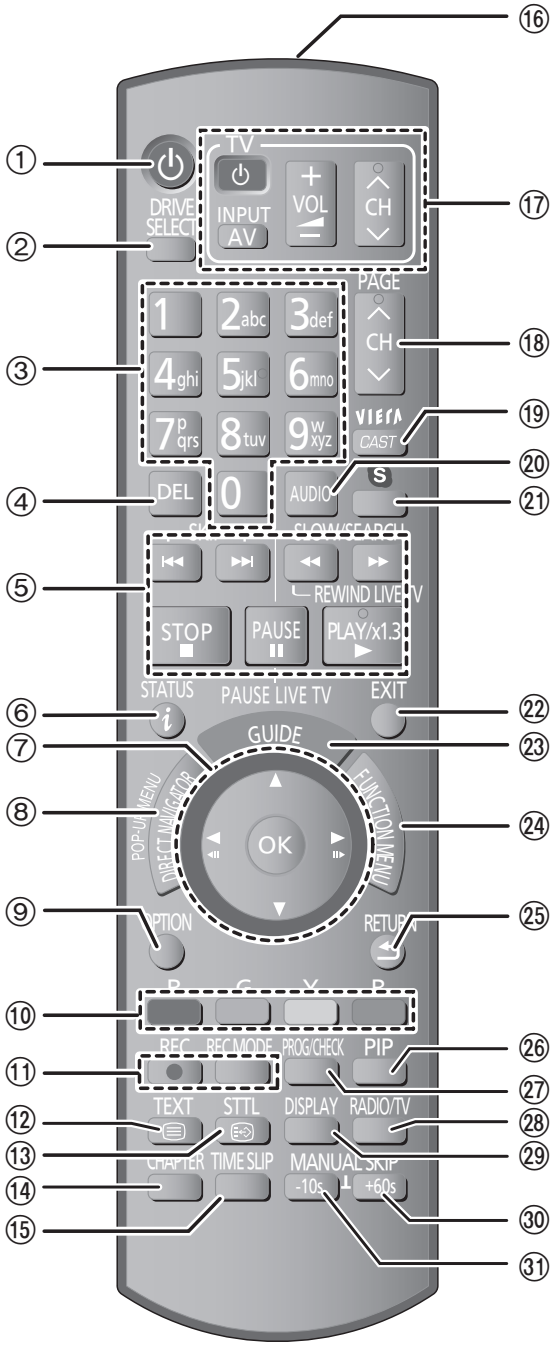
The manufacturer accepts no responsibility and offers no compensation for loss of recorded or edited material due to a problem with the unit or recordable media, and accepts no responsibility and offers no compensation for any subsequent damage caused by such loss.

An example of causes of such losses is that a disc recorded and edited with a Blu-ray Disc Recorder or computer disc drive manufactured by another company is played in this unit.

Control reference guide

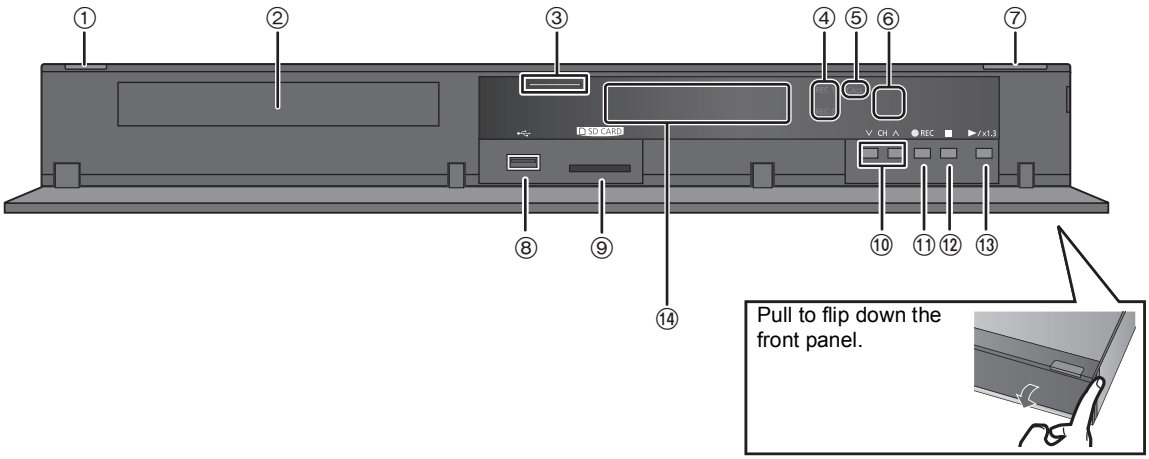
Remote control

Instructions for operations are generally described using the remote control.



① Turn the unit on or off (⇨ 18, 20)
② Select drive (HDD, BD, SD or USB) (⇨ 18)
③ Select channels and title numbers, etc./Enter numbers or characters (The character buttons may be used when operating VIERA CAST contents.)
④ To delete unwanted recorded titles, timer programmes, Photos or music (⇨ 44)
⑤ Basic operations for recording and play
⑥ Programme information within TV Guide screen (⇨ 26)/ Show channel information (⇨ 25)/ Show Information (⇨ 39)/ Show status messages (⇨ 41)
⑦ Selection/OK (⇨ 19), Frame-by-frame (⇨ 42)
⑧ Show DIRECT NAVIGATOR, Top Menu, Pop-up Menu (⇨ 36, 38)
⑨ Show OPTION menu (⇨ 45, 56, 63)
⑩ Colour buttons
Use in accordance with instruction on the screen.
⑪ Recording functions (⇨ 28)
⑫ Show Teletext (⇨ 25)
⑬ Show subtitles (⇨ 25)
⑭ Create chapter (⇨ 40)
⑮ Skip the specified time (⇨ 42)
⑯ Transmit the remote control signal
⑰ TV operation area (⇨ 87)
⑱ Channel select (⇨ 24)/ Change pages in the DIRECT NAVIGATOR screen etc. (⇨ 38)
⑲ Show VIERA CAST (⇨ 67)
⑳ Select audio (⇨ 25, 42)
㉑ Start up a video communication (⇨ 67)
㉒ Exit the menu screen
㉓ Show the TV Guide screen (⇨ 26)
㉔ Show FUNCTION MENU screen (⇨ 19)
㉕ Return to previous screen
㉖ Switch on/off Secondary Video (Picture-in-picture) (⇨ 36)
㉗ Show Timer Recording screen (⇨ 32)
㉘ Switching the radio channel list (⇨ 24)
㉙ Show Playback menu (⇨ 72)
㉚ Skip approx. 1 minute forward (⇨ 41)
㉛ Skip approx. 10 seconds backward (⇨ 41)

Main unit



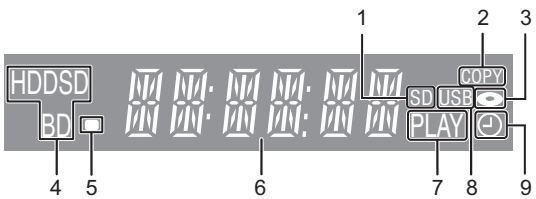
① **Standby/on switch (⏻/I)** (⇨ 18, 20)
Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.
② Disc tray (⇨ 18)
③ Blue LED
- It is possible to set the LED to turn on/off. (⇨ 80)

④ Recording indicator
- The indicater will light up while recording.
- The indicator will blink while recording is paused.

⑤ CALL LED
- The LED will light up when this unit receives incoming call etc. of the video communication. (⇨ 67)

⑥ Remote control signal sensor
– Angle: Approx. 20° up and down, 30° left and right
– Distance: Within approx. 7 m in front of the unit
⑦ Open/close disc tray (⇨ 18)
⑧ USB port (⇨ 18)
⑨ SD card slot (⇨ 18)
⑩ Channel select (⇨ 24)
⑪ Start recording (⇨ 28)
⑫ Stop
⑬ Start play

⑭ Display



1 SD card slot indicator
2 Copying indicator (⇨ 47)
3 Disc indicator
4 Drive (HDD, BD or SD) indicator
5 Remote control signal indicator
6 Main display section indicator
Current time/playback counter, various messages
7 Playback indicator
8 USB port indicator
9 Timer recording indicator
This indicator lights up when the timer recording standby is activated.

➢ **Rear panel terminals (⇨ 12–17)**

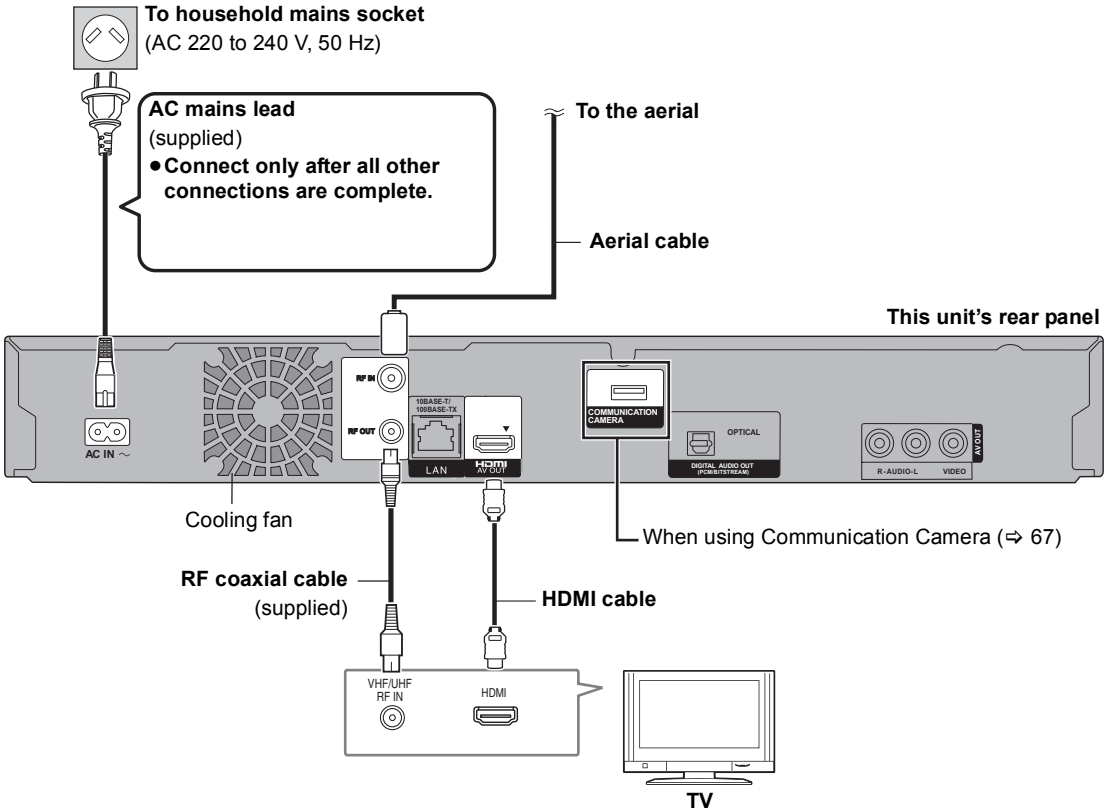
Connection

Basic connections

When connected to an HDMI compatible unit, you can enjoy high quality, digital video and audio.

3D programmes can be played back when this unit is connected to a 3D compatible TV using an HDMI cable.

- Before connection, turn off all equipment and read the appropriate operating instructions.
- Other TV connections (⇨ 15)



Required setting:
Set “HDMI Audio Output” to “On” (⇨ 81).
(The default setting is “On”.)

- The HDMI connection supports VIERA Link “HDAVI Control” (⇨ 68).

When the unit is not to be used for a long time
To save power, unplug it from the household mains socket. This unit consumes a small amount of power, even when it is turned off
[approx. 0.2 W (“Power Save in Standby” is activated and “RF OUT (Aerial Signal)” is set to “Off”)]

About HDMI cable

- Please use High Speed HDMI Cables that have the HDMI logo (as shown on the cover).
- When outputting 1080p signal, please use HDMI Cables 5.0 meters or less.
- Recommended Panasonic HDMI cable part number: RP-CDHS15 (1.5 m), RP-CDHS30 (3.0 m), RP-CDHS50 (5.0 m), etc.

- You cannot connect this unit to DVI devices that are incompatible with HDCP.
  Depending on the device, images may not display properly or at all when connecting with a DVI/HDMI switching cable. (Audio cannot be output.)
- If you are connecting to a TV that is only compatible with 2 channel audio output, audio with 3 channels or more will be down mixed (⇨ 107) and output as 2 channels, even if connecting with an HDMI cable. (Some discs cannot be down mixed.)

Network connection

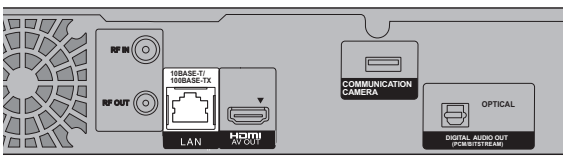
Following functions will be available when this unit is connected to the network.

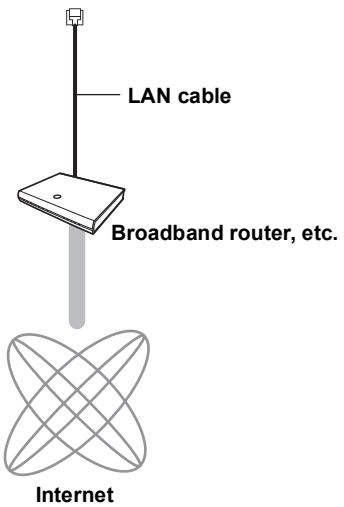
- DLNA functions (⇨ 70, 71)
- Network Service functions (⇨ 67)
- BD-Live functions with Internet (⇨ 36)
- Updating the software (firmware) of this unit from Internet (⇨ 86)

For details about connection method, refer to the instructions supplied with the connected equipment.

Using LAN (ethernet) cable

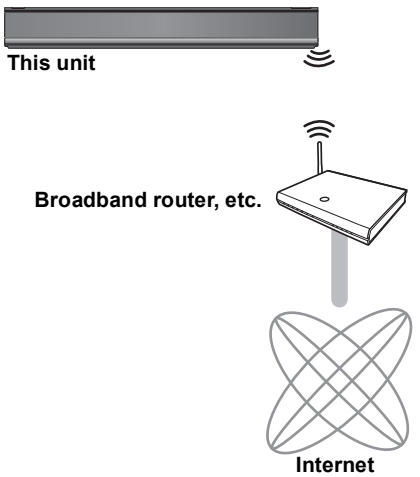
This unit's rear panel





- Use category 5 or above straight LAN cables (STP) when connecting to peripheral devices.
- Inserting any cable other than a LAN cable in the LAN terminal can damage the unit.

Using built-in Wireless LAN Adaptor



- For up to date compatibility information on your Wireless router refer to http://panasonic.jp/support/global/cs/ (This site is in English only.)
- The unit is not compatible with public wireless LAN services provided in airports, stations, cafes etc.

■ Precautions of Wireless LAN connection

The following limits are in place regarding the usage of this unit. You must be aware of these limits before using this unit.

Panasonic will in no way be responsible for any incidental damage which may arise due to a failure to obey these limits, or to any condition of use or disuse of this unit.

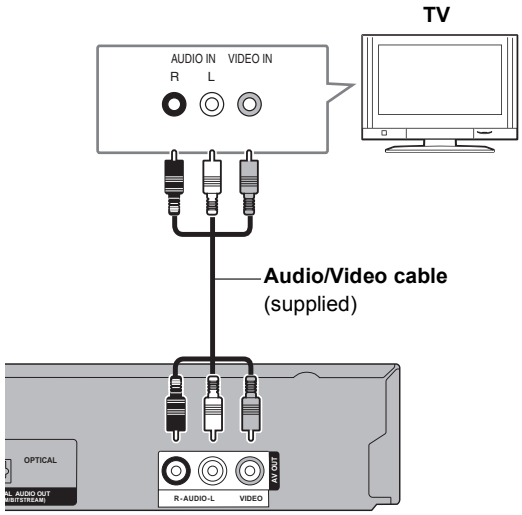
- **Data transmitted and received over radio waves may be intercepted and monitored.**
- **This unit contains delicate electronic components.**

  Please use this unit in the manner in which it was intended and follow the following points:
  - Do not expose this unit to high temperatures or direct sunlight.
  - Do not bend, or subject this unit to strong impacts.
  - Keep this unit away from moisture.
  - Do not disassemble or alter this unit in any way.

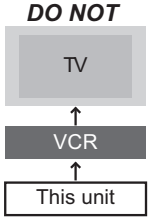
Other TV connections

AUDIO/VIDEO terminals

- Connect to terminals of the same colour.



This unit's rear panel



Connect the unit directly to the TV

If you connect the unit through an AV selector or VCR to the TV, video signal will be affected by copy protection systems and the picture may not be shown correctly.

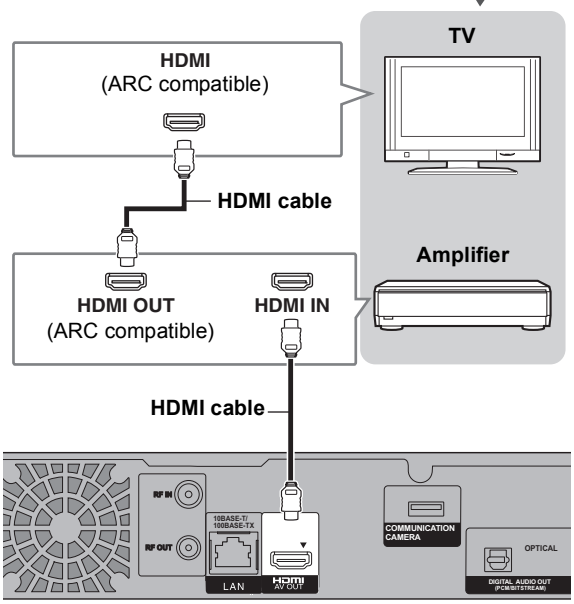
- **When connecting to a TV with a built-in VCR**

  Connect to the input terminals on the TV side if there are both TV and VCR input terminals.

Amplifier connections

3D programmes can be played back when this unit is connected to a 3D compatible amplifier and a 3D compatible TV using an HDMI cable.

- You will not be able to view 3D programmes with this connection if your amplifier is not 3D compatible.



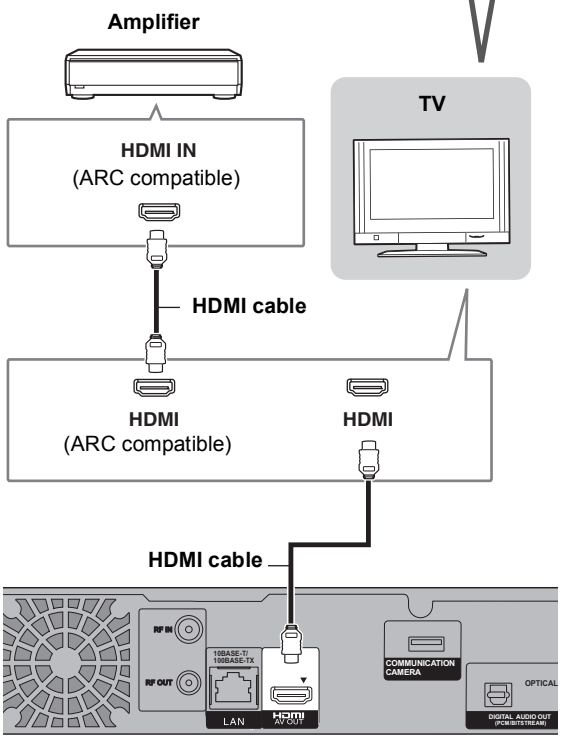
This unit's rear panel

- Linked operation is possible by connecting to a TV or amplifier compatible with VIERA Link.
- When using a TV or an amplifier that does not display "ARC compatible" on the HDMI terminal (not compatible with ARC), it is necessary to connect the TV and the amplifier with a digital audio cable to enjoy the TV audio on the amplifier.

When connecting an amplifier not compatible with 3D

3D programmes can be played back when this unit is connected to a 3D compatible TV using an HDMI cable.

- The audio can only be up to 5.1ch.



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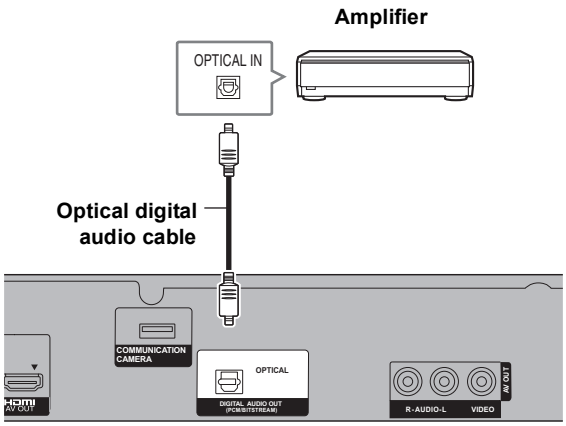
- When using a TV or an amplifier that does not display "ARC compatible" on the HDMI terminal (not compatible with ARC), it is necessary to connect the TV and the amplifier with a digital audio cable to enjoy the TV audio on the amplifier.

When using DIGITAL AUDIO OUT terminal



This unit's rear panel

- When connecting a TV with an HDMI OUT terminal, set "HDMI Audio Output" to "Off" (⇨ 81).
- When you use the optical digital audio cable, insert the tip correctly into the terminal.

Preparations

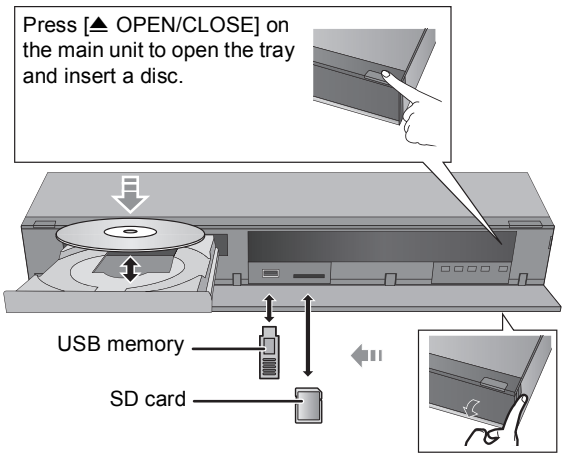
Turning on this unit

① Turn on the TV, then select the appropriate AV input to suit the connections to this unit.

② Press [⏻] on the remote control or [⏻/I] on this unit.

The Easy Setting will start at the initial power on after purchasing this unit. (⇨ 20)

Inserting or removing a media



- **When the indicator on this unit's display blinks, do not turn off the unit or remove the media. Such action may result in loss of the media contents.**
- When inserting the media, ensure that it is facing the right way up.
- Wipe off the dust or fingerprints from the discs before use. (⇨ 97)
- Return discs to their cases or cartridges after use; this helps to protect the discs against scratches and dust.
- When removing the SD card, press on the centre of the card and pull it straight out.
- If you connect a Panasonic product with a USB connection cable, setup screen may be displayed on the connected equipment. For details, refer to the instructions for the connected equipment.

■ To select a drive

Press [DRIVE SELECT] to select the media drive that you operate.

HOLD function

The HOLD function deactivates all buttons on the unit and remote control.

Press and hold [OK] and [RETURN ⮌] simultaneously until "X HOLD" appears on the unit's display.

Unit's display

To cancel the HOLD function

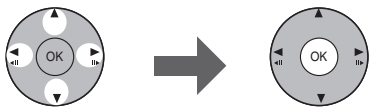
Press and hold [OK] and [RETURN ⮌] simultaneously until "X HOLD" disappears.

Basic operation

This unit is basically operated via the following method by using the remote control.

To select and enter

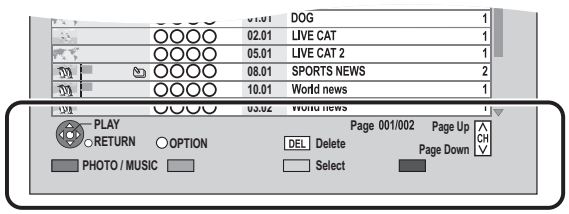
Select Enter



To return to the previous screen	**Press** RETURN
To exit the screen	**Press** EXIT

Display navigation

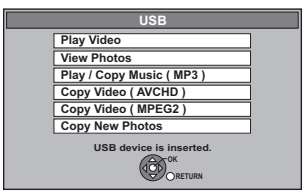
Operating method can also be confirmed on the screen. Available functions and buttons used are displayed on each screen.



Menu screen

Selecting screen for each operation is displayed when the media is inserted, and you can access the operation screen easily.

e.g., **USB**



- Display items differ depending on what is recorded in each media.

If the menu screen is not displayed, display it by performing the following operation.

1 **While stopped**
Press [OPTION].

2 **Select "Drive Select", then press [OK].**

3 **Select the media, then press [OK].**

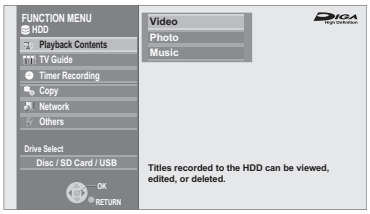
FUNCTION MENU screen

You can easily access the desired functions via the FUNCTION MENU.

1 **Press [FUNCTION MENU].**

2 **Select the item, then press [OK].**

- Repeat step 2 if necessary.



Playback Contents※

Video (⇨ 37)

Photo (⇨ 54)

Music (⇨ 60)

TV Guide (⇨ 26, 31)

Timer Recording (⇨ 32)

Copy (⇨ 50)

Network

Home Network (DLNA) (⇨ 71)

Internet Content (⇨ 67)

Others※

BD-Video Data Management (⇨ 65)

Setup (⇨ 74)

Drive Select※

Disc / SD Card / USB

※ This is a display for when drive select is set to HDD.

- Selectable items will change depending on the type and status of the media.

Easy Setting

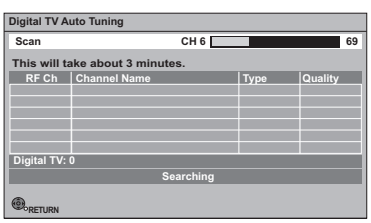
1 Turn on the TV, then select the appropriate AV input to suit the connections to this unit.

2 Press [⏻] to turn the unit on. (⇨ 18)

When the Download from TV screen is displayed, the setting information on the TV is acquired by this unit.

- **If the region selection screen appears.**
  Select your region, then press [OK].

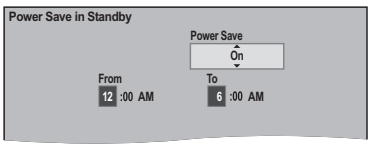
- **Auto-Tuning starts.**
  This takes about 3 minutes.
  - The acquisition may take some time depending on the setting information.



■ **When the Download from TV screen appears**
The setting information on the TV is acquired by this unit.

After tuning has been completed, clock will be set automatically.
If the clock setting screen appears, set the time manually (⇨ 84, Clock).

3 Set “Power Save” to “On”, “On Timer” or “Off”, then press [OK].



On	It will go into the Power Save in Standby mode.
On Timer	Set the start and stop time and then press [OK]. ● “Power Save in Standby” is activated when the set time comes.
Off	It is possible to start quickly from the standby mode. (Quick Start mode) ● If you use Home Network (DLNA) Server function (⇨ 83), select “Off”. This function is not available with other settings.

- Power consumption is lowered additionally when “RF OUT (Aerial Signal)” is set to “Off”. (⇨ 84)

When “Easy Setting has been completed.” appears, Easy Setting is complete.

To stop partway
Press [RETURN ⮌].

To restart set up
1 Press [FUNCTION MENU].
2 Select “Setup” in “Others”, then press [OK].
3 Select “Auto Setup” in “Digital TV Tuning”, then press [OK].

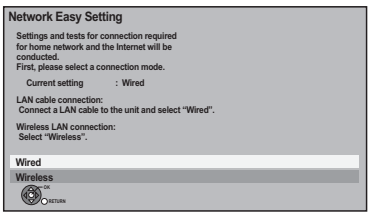
➢ **If the TV aspect setting screen appears (⇨ 80, TV Aspect)**

➢ **To confirm that channels have been tuned correctly (⇨ 24, Using Channel List)**

Network Easy Setting

After completing “Easy Setting”, you can continue with “Network Easy Setting”.

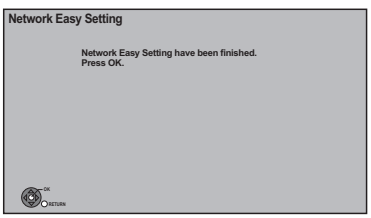
Select “Wired” or “Wireless”, then press [OK].



“Wired” connection

Follow the on-screen instructions and make the following settings.

- Network Easy Setting (Home Network Connection Check)
- Home Network (DLNA) Server function
- Network Easy Setting (Internet Connection Test)



This screen appears, Setup is complete.

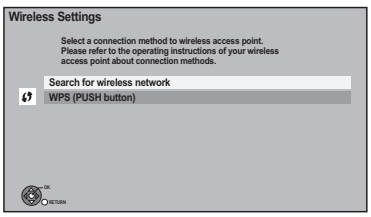
Press [OK].

➢ **When you experience problems with settings (⇨ 22)**

“Wireless” connection

- **Before beginning wireless connection setup**
  - Obtain your Network name (SSID※1).
  - If your wireless connection is encrypted please be sure that you know your encryption key.

Select “Search for wireless network” or “WPS (PUSH button)” and then follow the on-screen instructions and make the settings.



■ Search for wireless network:

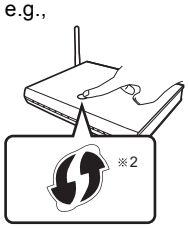
- When you select “Search for wireless network”, the available wireless networks will be displayed. Select your network name and press [OK].
  - – If your Network name is not displayed search again by pressing the “Red” button on the remote control.
  - – Stealth SSID will not be displayed when you select “Search for Network”. Enter Manually by using “Wireless Settings”. (⇨ 82)

- If your wireless network is encrypted, Encryption Key Input Screen will be displayed.
  Input the encryption key of your network.

■ WPS (PUSH button):

If your Wireless router supports WPS (PUSH button), you can easily perform the settings by pressing WPS button on it.
WPS (Wi-Fi Protected Setup) is a standard that facilitates settings relating to the connection and security of wireless LAN devices.

e.g.,



① Press WPS button or corresponding button of Wireless router until the lamp starts flashing.
- For details, refer to the operating instruction of Wireless router.

② Press [OK].

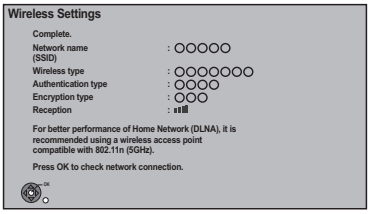
※1 An SSID (Service Set IDentification) is a name used by wireless LAN to identify a particular network. Transmission is possible if the SSID matches for both devices.

※2 Wi-Fi Protected Setup-compatible Wireless router may have the mark.

When you experience problems with settings

■ Wireless Settings

- If there is no problem, the following screen is displayed.

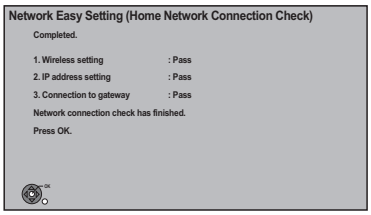


- If there is any problem, the following message is displayed on the screen.

Display	Check the following
A conflict with another device occurred.	● Please wait a few moments, and then try again.
A time out error occurred.	● Setting of the Wireless router for MAC Address etc. ● The signal may be weak. ● The SSID and the encryption key of the Wireless router. ● Please wait a few moments, and then try again.
An authentication error or a time out error occurred.	
A device error occurred.	● If there is no improvement in symptom, contact your dealer.

■ Network Easy Setting (Home Network Connection Check)

- If there is no problem, the following screen is displayed.
  e.g., “Wireless” connection

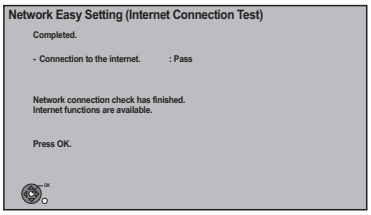


- If there is any problem, the following message is displayed on the screen.

Display		Check the following
1. LAN cable connection or Wireless setting: 2. IP address setting: 3. Connection to gateway:	“Fail” “Fail” “Fail”	● Connection of the LAN cables (⇨ 14)
1. LAN cable connection or Wireless setting: 2. IP address setting: 3. Connection to gateway:	“Pass” “Fail” “Fail”	● Connection and settings of the hub and router ● Settings of “IP Address / DNS Settings” (⇨ 82)
1. LAN cable connection or Wireless setting: 2. IP address setting: 3. Connection to gateway:	“Pass” “Pass” “Fail”	
1. LAN cable connection or Wireless setting: 2. IP address setting: 3. Connection to gateway:	“Pass” “Home network available” “Fail”	

■ Network Easy Setting (Internet Connection Test)

- If there is no problem, the following screen is displayed.



- If there is any problem, the following message is displayed on the screen.

Display	Check the following
Cannot find the server. (B019)	● “Primary DNS” and “Secondary DNS” settings of “IP Address / DNS Settings” (⇨ 82)
Failed to connect to the server. (B020)	● The server may be busy or the service may have been suspended. Please wait a few moments, and then try again. ● Settings of “Proxy Server Settings” (⇨ 82) and the router

To restart Network Easy Setting

1 Press [FUNCTION MENU].
2 Select “Setup” in “Others”, then press [OK].
3 Select “Network Easy Setting” in “Network”, then press [OK].

To redo settings individually

1 Press [FUNCTION MENU].
2 Select “Setup” in “Others”, then press [OK].
3 Select “Network Settings” in “Network”, then press [OK].
4 Select “IP Address / DNS Settings” (⇨ 82) or “Proxy Server Settings” (⇨ 82), then press [OK].

Check security before using Home Network (DLNA) Server function

If you set “Home Network (DLNA) Server function” to “On”, all connected devices on the same network can access this unit. Ensure that the router for your home network has adequate security system to prevent unauthorized access.

- Refer to the operating instructions of the hub or router.
- Home Network (DLNA) Server function setting can be set only when you selected “Off” for “Power Save in Standby” in “Easy Setting”. (⇨ 20, step 3)
- Even if you set “Home Network (DLNA) Server function” to “Off”, it is possible to set to “On” later. (⇨ 83)
- You can perform this setup anytime by selecting “Network Easy Setting” in the Setup menu. (⇨ 82)
- You can redo these settings individually using “Network Settings”. (⇨ 82)
- Do not use this unit to connect to any wireless network for which you do not have usage rights.
  During automatic searches in a wireless network environment, wireless networks (SSID) for which you do not have usage rights may be displayed; however, using these networks may be regarded as illegal access.
- After performing network settings on this unit, the settings (encryption level, etc.) of the Wireless router might change. When you have trouble getting online on your PC, perform the network settings on your PC in accordance with the settings of Wireless router.
- Please be aware that connecting to a network without encryption may result in the content of the communication being illegitimately viewed by a third party, or the leaking of data such as personal or secret information.

Watching broadcasts

Press [CH ∧ ∨] to select the channel.

- If menu screen, etc., is displayed, exit the screen by pressing [EXIT].

Everytime you change the channel, channel information appears automatically.

Unit's display;

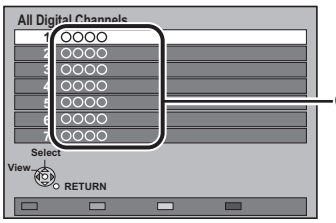
- You can also select the channel with the number buttons.

- The length of time the channel information is displayed can be changed. (⇨ 80, On-Screen Information)

Using Channel List

You can select from the list of channel names.

1 Press [OK].



2 Select the channel, then press [OK].

➢ **To edit the Channel List (⇨ 75)**

Switching the radio

Press [RADIO/TV].

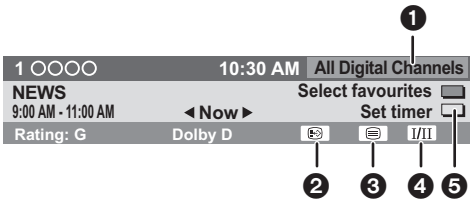
To switch the all channels
Press [RADIO/TV] again.

To show the radio channel list
Press [OK].

Channel information

Press [STATUS ⓘ].

e.g.,



❶ Current Favourites
❷ Subtitle
❸ Teletext
❹ Multiple audio
❺ Set timer (⇨ 33)

To show detailed information
Press [STATUS ⓘ] again.

To hide the information screen
Press [EXIT].

To change Favourites
Press the “Blue” button.

- **Register your favourite channels**

1 Press [OPTION].
2 Select “Digital TV Menu”, then press [OK].
3 Select “Favourites Edit”, then press [OK].
4 Refer to page 74 (Favourites Edit).

To switch between the current programme and the next programme
Press [◄, ►].

To switch to another channel
Press [▲, ▼], then press [OK].

Operations while watching broadcast

To show subtitle

When “ ” appears in channel information (⇨ left)

Press [STTL].

To hide subtitle

Press [STTL].

Switching audio

Press [AUDIO].

- Audio will switch according to the contents of the programme every time it is pressed.

To show Teletext

When “ ” appears in channel information (⇨ left)

Press [TEXT].

To select the page or access to certain topic areas and navigation

- Use [▲, ▼, ◄, ►], number buttons or colour buttons, etc. according to on-screen instructions.

- Some functions of Teletext are deactivated during recording.

Aspect

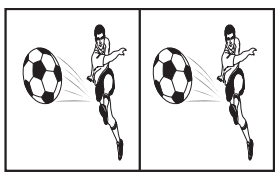
You can switch the screen mode. (⇨ 87)

To show 3D programme

3D programmes can be played back when this unit is connected to a 3D compatible TV using an HDMI cable.

- Change the setting if you cannot view 3D compatible programmes in 3D.

e.g., Side by side programme

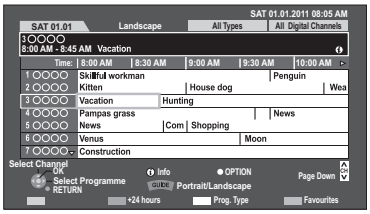


1 Press [OPTION].
2 Select “3D Settings”, then press [OK].
3 Select “Side by side” in “Signal Format”, then press [OK].

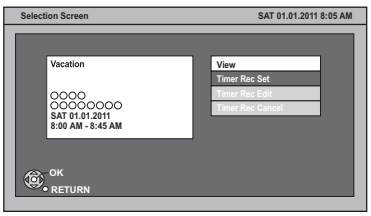
➢ **Enjoying 3D video (⇨ 43)**

Using TV Guide system

1 **Press [GUIDE].**



2 **Select the programme, then press [OK].**



3 **Select "View", then press [OK].**

Page up/down
Press [CH ∧ ∨].

To view a programme list for another day
Press the "Red" button (Previous) or the "Green" button (Next).

➢ **Timer Recording using the TV Guide System (⇨ 31)**

● Some broadcast may not send programme information.

To see programme information

(Programmes with the ⓘ symbol)

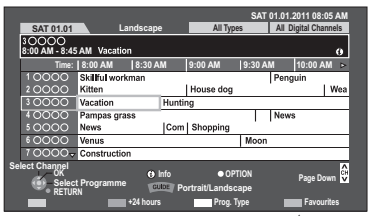
While displaying TV Guide screen
Press [STATUS ⓘ].

Additional information is available for these programmes.

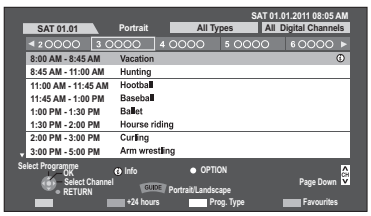
Switch the appearance

While displaying TV Guide screen
Press [GUIDE].

Landscape view



Portrait view



REWIND LIVE TV/PAUSE LIVE TV

This unit temporarily saves a live TV programme you are watching with this unit's tuner on HDD and you can use the following functions.

■ REWIND LIVE TV

You can rewind live TV programme up to 1.5 hours before as long as temporary save has not been stopped.

■ PAUSE LIVE TV

You can pause live TV programme and restart watching from the paused position.

Select the HDD drive to perform these functions correctly.

1 **While watching TV**

REWIND LIVE TV

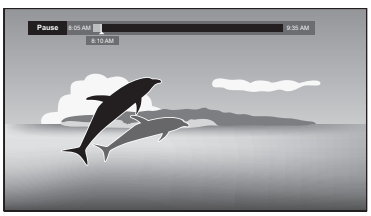
Press [SLOW/SEARCH ◄◄] to rewind.

- "REWIND LIVE TV" appears on the unit's display.

PAUSE LIVE TV

Press [PAUSE ❚❚] to pause.

- "PAUSE LIVE TV" appears on the unit's display.



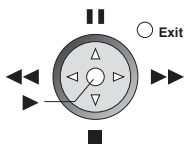
2 **When you want to resume**

Press [PLAY/×1.3 ►].

- You can perform search or Quick View, etc.

- **Control Panel**
  Control Panel is displayed once the playback starts. Operation can be performed with [▲, ▼, ◄, ►], [OK] and [EXIT].

e.g.



If the Control Panel is not displayed.

1 Press [OPTION].
2 Select "Control Panel", then press [OK].

To hide the Control Panel

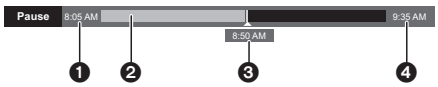
Press [RETURN ⮌].

- If temporary save stops (⇨ right), playback will be performed by that point.

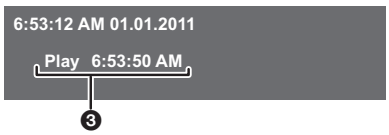
Display information

■ **While pausing or rewinding a broadcast:**

Press [STATUS ⓘ].



- Press [STATUS ⓘ] again.



❶ The time that you can rewind the live programme.
❷ The amount of time temporarily saved on HDD (maximum: 1.5 hours).
❸ The time of the current playback position.
❹ The time which is 1.5 hours after PAUSE LIVE TV or REWIND LIVE TV started.
- After 1.5 hours from PAUSE LIVE TV or REWIND LIVE TV started, current time is displayed.

To stop REWIND LIVE TV or PAUSE LIVE TV

1 Press [STOP ■].
2 Select "Yes", then press [OK].

To hide the display information

Press [EXIT].

- Temporary save stops in the following cases:
  – When switching to other channels or other screen
  – When recording of the watching programme is started
  – When 2 programmes simultaneous recording is started
  – When performing PAUSE LIVE TV or REWIND LIVE TV for more than 8 hours (This may vary depending on the HDD free space.)
- These functions do not work in the following cases:
  – When the clock is not set
  – While recording 2 programmes simultaneously
  – While copying
  – While watching a programme being recorded
  – When a radio programme is selected
  – REWIND LIVE TV When "REWIND LIVE TV" is set to "Off" (⇨ 77)
- PAUSE LIVE TV You can operate this unit with the TV remote control by using VIERA Link (⇨ 68).
  Refer to the TV operating instructions for operation.

Recording TV programmes

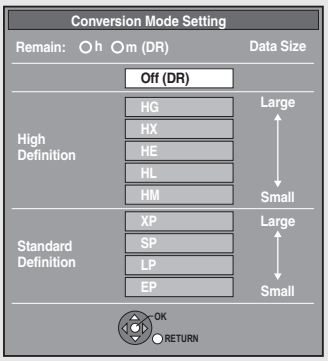
- **This operation will only record to HDD.**
- **The titles recorded onto the HDD of this unit cannot be copied to the media.**

1 Press [CH ∧ ∨] to select the channel.

- You can also select the channel with the number buttons.

2 Press [REC MODE] and select the conversion mode, then press [OK].

- This unit will record the programmes in DR mode once, and then automatically convert to the selected recording mode while this unit is in standby. (⇨ 8, Recording mode)



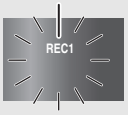
- The recorded title will be kept in DR mode without any conversion when “Off (DR)” is selected.
- The conversion mode set here is inherited as an initial value for the next recording or timer recording.
- **If the confirmation message appears**
  Press [OK].

3 Press [REC ●].

Recording starts.

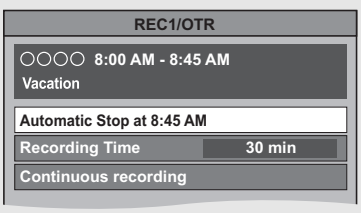
“REC1” or “REC2” will light

Unit’s display



4 Select the “Automatic Stop” then press [OK].

- **One touch recording (OTR)**
  Recording stops automatically when the programme ends.



- “Automatic Stop” cannot be selected depending on a programme. In this case select “Recording Time” or “Continuous recording”. (⇨ 29)

To set the recording time

1 Select “Recording Time” or “Continuous recording” in step [4] on page 28.

Recording Time	You can set the length of recording time from 30 minutes to 4 hours. Select the recording time. ● You can also set the time with [REC ●].
Continuous recording	The recording is continued until you press [STOP ■].

2 Press [OK].

■ **Recording mode conversion**

Conversion is performed when the unit is turned off.

- **To confirm whether the conversion is completed (⇨ 47, To confirm whether the conversion is completed)**
- **To cancel a conversion (⇨ 47, To cancel a “During standby” conversion)**

- The title before conversion (the title recorded in DR mode) will be deleted once the conversion is completed.
- When the HDD does not have enough remaining time, conversion will not start.
- This function is stopped when this unit is turned on. Conversion will start from the beginning again once the unit is turned off.
- When converted, audio track, multi channel audio and subtitle will be converted with the same settings as at the start of recording.

- **To convert the recording mode after recording in DR mode (⇨ 47)**
- **Recording modes and approximate recording times (⇨ 103)**

- One recording will terminate when simultaneous recording is being done and timer recording starts.
- When “Automatic Standby after OTR” is set to “On” (⇨ 84), this unit is turned to standby mode if this unit is not operated for approximately 5 minutes after completing “Automatic Stop” or “Recording Time” (⇨ 28).

Operation during Recording

To check the recording programme

Press [STATUS ⓘ].

e.g., While recording 2 programmes simultaneously

Recording programme displayed on the TV

Recording programme not displayed on the TV

To switch the Channel

Press [CH ∧ ∨].

To display the recording programme on the TV

It is necessary to display the recording programme onto the TV screen to perform operations such as pause.

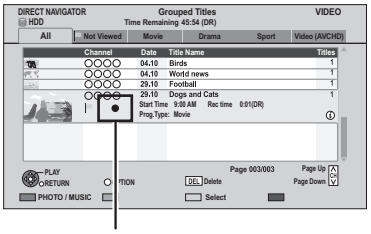
Press [CH ∧ ∨] to select the recording channel.

Simultaneous rec and play

You can play the recording title from the beginning or the titles previously recorded to the HDD.

① **While recording**

Press [DIRECT NAVIGATOR].



"●" is displayed on the recording programme.

② **Select the title, then press [OK].**

To stop recording

Press [STOP ■].

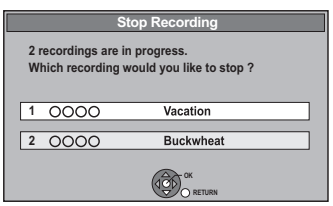
■ **When recording 1 programme**

If the following screen appears

Select "Yes", then press [OK].

■ **When recording 2 programmes**

If the following screen appears



1 Select the programme, then press [OK].
2 Select "Yes", then press [OK].

To pause recording

It is necessary to display the programme you want to pause on the TV. (⇨ 29, To display the recording programme on the TV)

Press [PAUSE ❚❚].

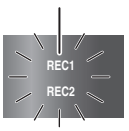
- Press again to restart recording.
  (A title is not split into separate titles.)
- If paused while recording, the paused part may become a still picture for a moment during playback of that programme.

To perform 2 programme simultaneous recording

While recording

Record another programme with steps 1 – 4 on page 28.

"REC1" and "REC2" will light



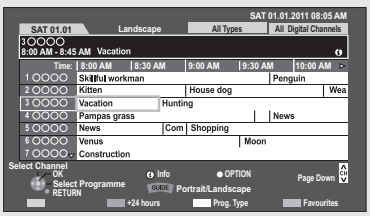
Unit's display

- 2 programme simultaneous recording is not possible while high speed copying.
- Channel cannot be switched except to the recording programmes.

Timer recording

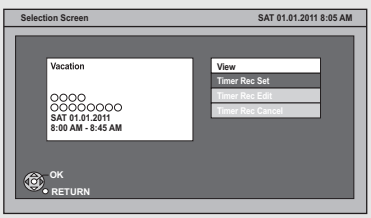
- **This operation will only record to HDD.**
- **The titles recorded onto the HDD of this unit cannot be copied to the media.**

1 Press [GUIDE].



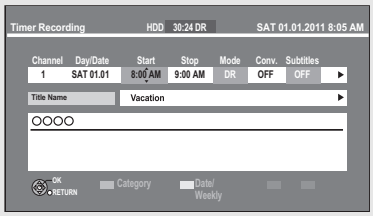
2 Select the programme, then press [OK].

- When the programme currently broadcasting is selected, following screen is displayed.



Select “Timer Rec Set”, then press [OK].

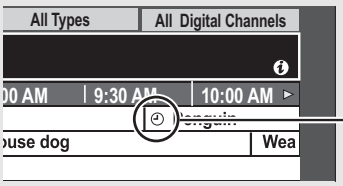
3 Confirm the programme and make corrections if necessary using [▲, ▼, ◄, ►].



(⇨ 33, Timer recording options)

4 Press [OK].

The timer programme is stored and the timer icon (red) is displayed.



To cancel a timer recording on the TV Guide screen

Select “Timer Rec Cancel” in step 2.
(“” in the TV Guide disappears)

To modify the timer recording on the TV Guide screen

1 Select “Timer Rec Edit” in step 2.
2 Go to step 3 on page 32.

➢ **Using TV Guide system (⇨ 26)**

- You can enter up to 32 programmes up to a month in advance. (Each daily or weekly programme is counted as one programme.)
- You can set the start and finish time to make the timer recording work successfully. (⇨ 77, Timer Record Start Buffer, Timer Record Stop Buffer)
- Some broadcast may not send programme information. Set the timer recording manually (⇨ 32).

To search the programmes

① **While displaying TV Guide screen**
Press the “Yellow” button (Prog.Type) or the “Blue” button (Favourites).

② **Select the item, then press [OK].**

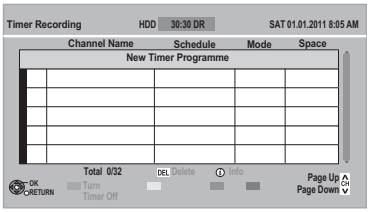
Landscape view	The unit displays programmes in grey that do not belong to the selected programme type.
Portrait view	Only the selected programme types are displayed.

To return to the previous TV Guide list
Select “All Types” of the programme type or “All Digital Channels” of the Favourites in step ②.

- Favourites and programme types may not be assigned correctly depending on the programme information.

Manually programming timer recording

1 **Press [PROG/CHECK].**



2 **Select “New Timer Programme”, then press [OK].**

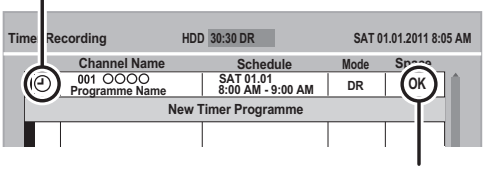
3 **Select the items and change the items.**

(⇨ 33, Timer recording options)

4 **Press [OK].**

The timer programme is stored and the timer icon (red) is displayed.

Timer icon (red)



Check for available space on HDD, when the “!” is displayed. (⇨ 35)

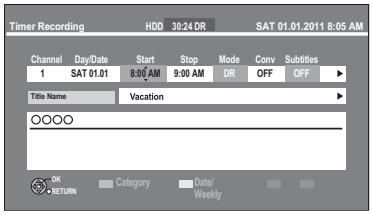
➢ **To confirm and edit the timer programme (⇨ 35)**

- You can enter up to 32 programmes up to a month in advance. (Each daily or weekly programme is counted as one programme.)

Timer recording options

Select the items and change the items.

e.g.,



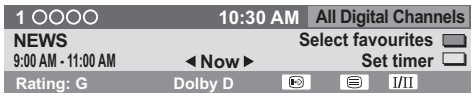
Channel	**Press [▲, ▼].** ●You can select Category with the “Red” button to switch Favourites, etc.
Day/Date	**Press [▲, ▼].** You can select “Date” or “Weekly” by pressing the “Green” button. ●**Auto Renewal Recording** The unit will record the new programme over the old one. (Only when “Weekly” is selected) **Press the “Yellow” button.** “Renew On” is displayed.
Start/Stop	**Press [▲, ▼].** ●Press and hold [▲, ▼] to alter in 15-minute increments.
Mode/Conv.	**Press [▲, ▼].**
Subtitles	(Only when item other than “Off” is selected in “Conv.”) **Press [▲, ▼].**
Title Name	**Select “Title Name”, then press [OK].** (⇨ 66, Entering text)

Timer recording from channel information

You can make timer recording of the current or next programme.

1 **While watching a programme**
Press [STATUS ⓘ].

e.g.,



2 **Press [◄, ►] to select the recording programme.**

3 **Press the “Yellow” button.**

4 **Go to step 3 on page 32.**

●You cannot change “Channel” and “Day/Date”.

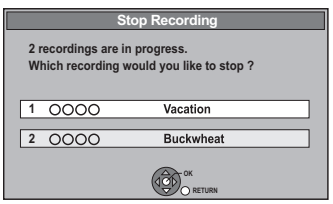
To cancel recording when timer recording has already begun

Press [STOP ■].

■ **When recording 1 programme**

Select “Yes”, then press [OK].

■ **When recording 2 programmes**

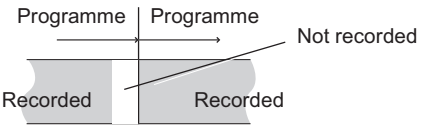


1 Select the programme, then press [OK].
2 Select “Yes”, then press [OK].

● If you have already set a weekly/daily timer recording, the recording will start at the next scheduled time.

Notes on timer recording

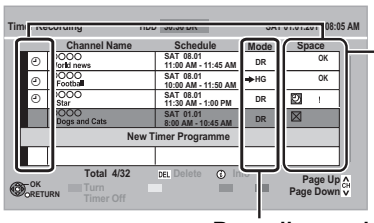
- When recording except in DR mode, the audio content will be selected according to the following settings:
  – “Audio Type for Digital Broadcast” (⇨ 79)
  – “Audio for HG / HX / HE / HL / HM Recording” (⇨ 79)
- This unit will record in the DR mode once, and then convert to the selected mode automatically during standby. (⇨ 28)
- Depending on the state of the unit, playback may stop when recording begins.
- Even if you turn the unit off during the timer recording, the recording is continued.
- When you programme successive timer recordings to start, about last 1 minute of earlier programme will not be recorded.



➢ **Starting the timer recording while executing other operation (⇨ 98)**
➢ **About 2 programme simultaneous recording (⇨ 30)**

To confirm and edit a timer programme

Press [PROG/CHECK].



Icons

Recording mode (⇨ 8)

To deactivate a timer programme

Select the programme, then press the “Red” button.

- The timer icon “◴” (⇨ right) will change from red to grey.
- Press the “Red” button again to activate timer recording standby. (The timer icon “◴” will change to red.)

To delete a timer programme

Select the programme, then press [DEL].

To edit a timer programme

1 Select the programme, then press [OK].
2 Change the timer recording options.
(⇨ 33, Timer recording options)

To show programme information

Press [STATUS ⓘ].

To exit the timer recording list

Press [EXIT].

- Failed programmes are deleted from the timer recording list at 4 a.m. two days later.

Screen icons

◴	Red: Timer recording standby is activated. Grey: Timer recording standby is deactivated.
●	Currently recording programme
	Part or all of the programme will not be recorded since the programme is overlapping.
	The HDD is full.
	Copy-protected programme It was not recorded.
	The programme did not complete recording because of some reason.
	Auto Renewal Recording is set (⇨ 33).
OK	Displayed if the recording can fit in the remaining space
→ (Date)	Daily or weekly timer programme is set. (up to a maximum of one month from the present time)
!	It may not be possible to record because: – there is not enough space left. – the number of possible titles has reached its maximum. (⇨ 103) – programmes are deactivated.

Playing BD-Video or DVD-Video

BD-V DVD-V

1 Insert a disc.

- Play starts from the point specified by the disc.

2 Select the item, then press [OK].

- Some items can also be selected using the number buttons.

Playback starts.

To display Pop-up Menu

Press [DIRECT NAVIGATOR].

- Press again to exit.

To display Top Menu

1 Press [OPTION].
2 Select “Playback Menu”, then press [OK].
3 Select “Top Menu”, then press [OK].

- If the Top menu is not displayed
  Press [DIRECT NAVIGATOR].

➢ **Enjoying 3D Video (⇨ 43)**

Enjoying BD-Live or picture-in-picture in BD-Video

BD-V

Enjoying BD-Live discs with Internet

BD-Live allows you to enjoy more functions such as subtitles, exclusive images and online games by connecting this unit to the Internet. Since most of the BD-Live compatible discs are played back using the BD-Live function, additional contents are required to be downloaded into the HDD. (⇨ 108, Local storage)

Preparation

① Perform network connection and settings. (⇨ 14, 21, 82)
② Insert a disc.

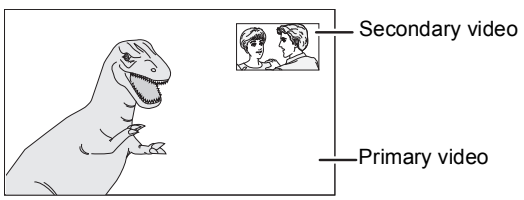
For the playback method, refer to the instructions for the disc.

Playing picture-in-picture

For the playback method, refer to the instructions for the disc.

- You can turn on/off the secondary video also by pressing [PIP].

e.g.,



When the secondary video does not display

Turn the “Video” and “Soundtrack” to “On” in the “Secondary Video” in the “Signal Type” in the Disc menu. (⇨ 72)

- The usable functions and the operating method may vary with each disc, please refer to the instructions on the disc and/or visit their website.
- When the BD-Live data cannot be downloaded due to a lack of storage capacity, it is necessary to delete existing download data. (⇨ 65, Delete BD-Video data)
- Some BD-Live content available on the Blu-ray discs may require an Internet account to be created in order to access the BD-Live content. Follow the screen display or instruction manual of the disc for information on acquiring an account.
- “BD-Live” may need to be changed for certain discs (⇨ 77, BD-Live).
- When discs supporting BD-Live are played back, the player or disc IDs may be sent to the content provider via the Internet.
- During search/slow-motion or frame-by-frame, only the primary video is displayed.
- When “BD-Video Secondary Audio” is set to “Off”, secondary audio will not be played (⇨ 79).

Playing recorded video contents

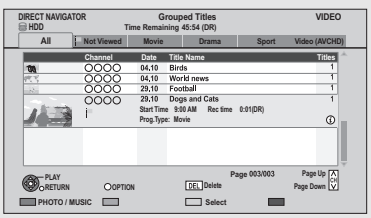
HDD BD-RE BD-R -R -R DL -RW(V) +R +R DL +RW -RW(VR) SD USB

1

■ HDD:

①Press [DRIVE SELECT], then select “HDD”.

②Press [DIRECT NAVIGATOR].



■ Except HDD:

①Insert the media.

②Select the item in the menu screen, then press [OK].

- It will go to step 2 automatically depending on the disc.

2

Select the title, then press [OK].

- **Resume play function**
  If the following screen appears, select the point to start playback.

■ **AVCHD: If the menu screen is not displayed**
Press [PLAY/×1.3 ►].

To playback of the playlist created on other equipment

1 Press [FUNCTION MENU].
2 Select “Playlists” in “Others”, then press [OK].
3 Select the playlist, then press [OK].

➢ **To display the menu screen (⇨ 19)**
➢ **About DivX VOD content (⇨ 95)**

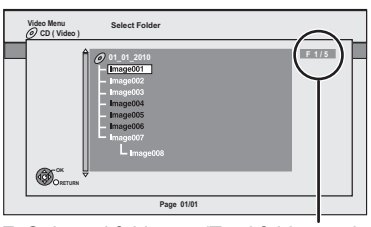
- Multiple titles may not playback continuously depending on the disc. Press [DIRECT NAVIGATOR], and playback by selecting the title.
- Playback of DivX and MKV is not possible during recording.
- Some DivX and MKV file may not be played back, depending on the video resolution and frame rate condition.

Using the tree screen to find a folder

DivX and MKV

①While the file list is displayed
Press [OPTION].

②Select “Select Folder”, then press [OK].



F: Selected folder no./Total folder no. including DivX and MKV title.

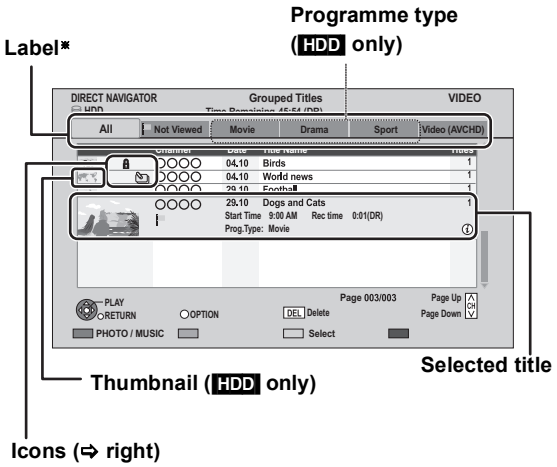
You cannot select folders that contain no compatible files.

③Select the folder, then press [OK].
The file list for the folder appears.

Using the DIRECT NAVIGATOR (VIDEO)

Press [DIRECT NAVIGATOR].

e.g., HDD



* Only “All” will be displayed in “Label” when using the media other than HDD.

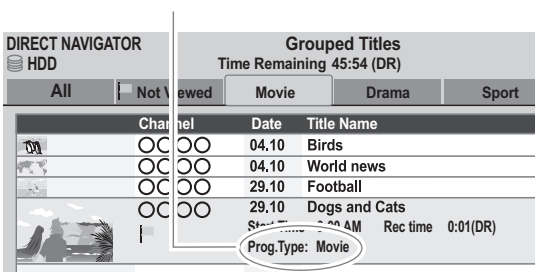
Label

HDD

Titles recorded to HDD will be categorized automatically. You can quickly find the recorded titles by selecting the label.

Select the label with [◄, ►].

To sort a selected title from the “All” label into the programme type labels, set “Prog.Type” of the title. (⇨ 46, Changing programme type of title)



- To change the displayed label, go to “Changing the programme type” on page 39.
- High Definition video (AVCHD) acquired from the disc, SD card or USB device is sorted to “Video (AVCHD)” automatically.

Screen icons

●	Currently recording programme
	Protected title
	Title was not recorded due to recording protection
×	Title cannot be played (When copying a title to the HDD, or when data is damaged etc.)
	Grouped titles
	Title has not yet been played
NTSC PAL	Title is recorded using a different encoding system from that of the TV system on the unit. Alter the “TV System” setting on this unit to suit (⇨ 80).
	Radio programme
3D	3D contents ● This icon will not display even with 3D programmes when a broadcast programme is recorded.
1080 50p	Recorded in 1080/50p contents
1080 60p	Recorded in 1080/60p contents
G	Title is restricted by Child Lock (Parental Rating) (⇨ 75).
	Recording did not complete as the timer recording has started.

Switching to the PHOTO or MUSIC screen

■ HDD

① Press the “Red” button.

② Select “PHOTO” or “MUSIC”, then press [OK].

■ BD-RE

Press the “Red” button.

The screen switches from “VIDEO” to “PHOTO”.

Switching the appearance

HDD

① Press [OPTION].

② Select “Grouped Titles” or “All Titles”, then press [OK].

Grouped Titles	Two or more titles recorded in the Daily/weekly timer recording mode are bundled and displayed as one item.
All Titles	Displays all titles.

To view the individual titles in grouped titles

HDD

While displaying Grouped Titles screen:

Select the item marked with , then press [OK].

Changing the programme type

HDD

Programme type displayed in the label can be changed.

① Select the programme type, then press the “Green” button.

② Select the item, then press [OK].

- “All”, “Not Viewed” and “Video (AVCHD)” cannot be changed.

Showing Information

Select the title, then press [STATUS ⓘ].

- Information of a recording title cannot be displayed.

Playback grouped titles

HDD

The titles will be played continuously.

Select the group, then press [PLAY/×1.3 ►].

Editing the grouped titles

HDD

① Select the title or the group, then press the “Yellow” button.

A check mark is displayed. Repeat this step.

- Press the “Yellow” button again to cancel.
- If you perform “Remove”, select the title in the group.

② Press [OPTION].

③ Select the item, then press [OK].

Create Group	Selected titles are bundled to form a group. **Select “Create”, then press [OK].**
Release Grouping	All the titles in the group are released. **Select “Release”, then press [OK].**
Remove	Selected titles are removed from the group. **Select “Remove”, then press [OK].**

Changing the group name

HDD

① Select the group, then press [OPTION].

② Select “Edit”, then press [OK].

③ Select “Enter Title Name”, then press [OK].

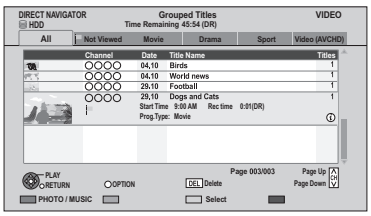
(⇨ 66, Entering text)

- Even if the group name is changed, the title names in the group will not be changed.

Playback from Chapter View

HDD BD-RE BD-R -R -R DL -RW(V) -RW(VR) +R +R DL +RW

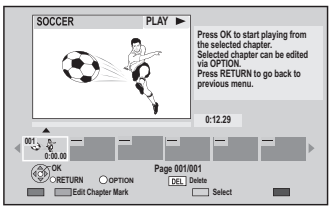
1 Press [DIRECT NAVIGATOR].



2 Select the title, then press [OPTION].

3 Select the "Chapter View", then press [OK].

Chapter View screen
e.g., HDD



4 Select the chapter, then press [OK].

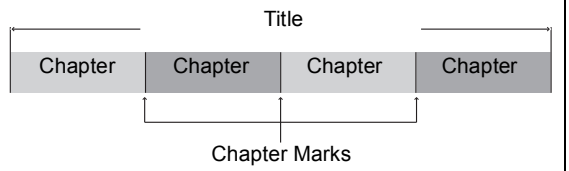
➢ **Editing chapters in Chapter View (⇨ 48)**

To create Chapter Marks

HDD

Regarding chapters

You can divide a title into multiple chapters. Each section between the division points (Chapter Marks) becomes a chapter.



During the playback or pause

Press [CHAPTER].

To delete the Chapter Mark

1 **While paused**
Press [SKIP |◀◀] or [SKIP ▶▶|] and skip to the location you want to delete.
2 Press [CHAPTER].
3 Select "Yes", then press [OK].

- The maximum number of chapters:
(Depends on the state of recording.)
Approx. 1000 per title
- When the title has the maximum number of chapters, you cannot perform the Resume play function (⇨ 37) or the "Change Thumbnail" (⇨ 46) with the title.

Operation during play

- Depending on the media and the type of file, some operations may not be possible.
- Depending on the media, it may take time for the menu screen, pictures, sound, etc. to start.
- Discs continue to rotate while menus are displayed. Press [STOP ■] when you have finished playback to protect the unit's motor, your TV screen, etc.

Showing status messages

Press [STATUS ⓘ] twice.

e.g.,

Title number and elapsed time during play and recording mode

Stop

Press [STOP ■].

The stopped position is memorized.

Resume play function

Press [PLAY/×1.3 ▶] to restart from this position.

- The resume play function does not work depending on the disc.

Stopped position

HDD: Stopped position for each title is memorized.
Discs: Only previous stopped position is memorized. The position is cleared if the tray is opened or the unit is turned off.

Search

Press [SLOW/SEARCH ◀◀] or [SLOW/SEARCH ▶▶].

- The speed increases up to 5 steps. (+R +R DL +RW Up to 3 steps)
- Press [PLAY/×1.3 ▶] to restart play.
- Audio is heard during first level search forward. DivX and MKV: Audio is not heard during all levels search.
- BD-V Only primary video is played while performing this operation.

Manual Skip

■ **Skip forward 1 minute**
Press [MANUAL SKIP +60s].

■ **Skip backward 10 seconds**
Press [MANUAL SKIP -10s].

- Each time you press, play skips forward or backward.
- DivX and MKV: This function is not effective.

Quick View

HDD

Press and hold [PLAY/×1.3 ▶].

Play speed is quicker than normal.

- Press again to return to normal speed.

Pause

Press [PAUSE ❚❚].

Press [PAUSE ❚❚] again or [PLAY/×1.3 ▶] to restart play.

Slow-motion

While paused, press [SLOW/SEARCH ◀◀] or [SLOW/SEARCH ▶▶].

The speed increases up to 5 steps.

- Press [PLAY/×1.3 ▶] to restart play.
- DivX and MKV: This function is not effective.
- BD-V, AVCHD: Forward direction [SLOW/SEARCH ▶▶] only.

Frame-by-frame

While paused, press [◄] (◄❚❚) or [►] (❚❚►).

Each press shows the next frame.

- Press and hold to change in succession forward or backward.
- Press [PLAY/×1.3 ►] to restart play.
- DivX and MKV: This function is not effective.
- BD-V, AVCHD: Forward direction [►] (❚❚►) only.

Skipping the title or chapter

During play or while paused, press [SKIP |◄◄] or [SKIP ►►|].

Skip to the title or chapter you want to play.

- It will skip to the beginning of chapters (⇨ 40) if the title contains chapters.
- HDD It will not skip the title. But the title in the grouped titles during the “Playback grouped titles” (⇨ 39) will be skipped.

Skipping the specified time (Time Slip)

① **Press [TIME SLIP].**

② **Select the time with [▲, ▼], then press [OK].**

Play skips the specified time.

- Press and hold [▲, ▼] to change the time by 10-minute.

This automatically disappears after approximately 5 seconds. To show the screen again press [TIME SLIP] again.

- BD-V DVD-V, DivX, MKV and AVCHD: This function is not effective.

Changing audio

Press [AUDIO].

- It will switch depending on the contents recorded every time it is pressed.

Switching subtitles

■ **HDD BD-RE BD-R (DR mode only)**

Press [STTL].

■ **BD-V DVD-V and AVCHD:**

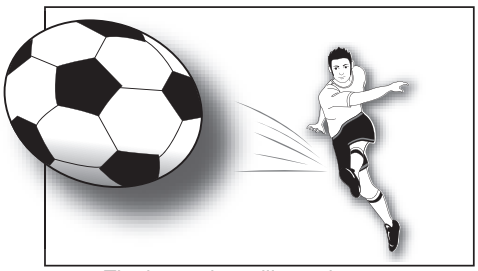
Display with “Subtitles” in the Disc menu (⇨ 72).

Aspect

You can switch the screen mode. (⇨ 87)

Enjoying 3D video

You can enjoy powerful 3D videos with realistic sensations by connecting this unit with a High Speed HDMI Cable to a 3D compatible TV.



The image is an illustration.

Preparation

Connect 3D compatible TV to an HDMI AV OUT terminal of this unit using a High Speed HDMI Cable. (⇨ 13)

- Perform the necessary preparations for the TV.

Playback following the instructions displayed on the screen.

3D settings

Perform the following settings as necessary.

3D BD-Video Playback BD-V	It is also possible to play back 3D discs in 2D (conventional video). (⇨ 76)
3D Type	If 3D video cannot be played back in 3D, change the settings as required by the connected TV format. (⇨ 80)
3D Playback Message	Hide the 3D viewing warning screen. (⇨ 80)
Graphic Display Level BD-V	Adjust the pop-up position for the playback menu or message screen etc. (⇨ 72)

Convenient functions while viewing the 3D video

Change this setting when the screen such as playback settings, etc., is not correctly displayed for 3D compatible programmes.

① Press [OPTION].

② Select “3D Settings”, then press [OK].

③ Select the item, then press [OK].

Signal Format	**Original**	Keep original picture format.
	Side by side	3D picture format comprising of left and right screens. ● Check the “3D Type” (⇨ 80) and the 3D setting of the TV if it does not display correctly even if changed.
	2D to 3D*	Converts 2D pictures to 3D effect while playing.
3D Picture Mode*	**Normal**	Playback pictures with normal 3D effects.
	Soft	You can enjoy 3D pictures with a feeling of broadness, holding back the depth perception. ● This function cannot be enabled when “Signal Format” is set to “2D to 3D”.
	Manual Settings	Set 3D effect manually. ● **Distance** Set the amount of depth perception. ● **Screen Type** Selects how the screen appears during 3D playback (flat or round). ● **Frame Width** Set the amount of feathering at the edge of screen. ● **Frame Colour** Set the colour of feathering at the edge of screen.

* This function is not effective while watching broadcast.

- Depending on the contents, displayed items are different.
- Subtitles and TV Guide, etc., may not display correctly depending on the settings.
- This unit does not guarantee the playback of 3D programme types other than the Frame Packing type or the Side-by-Side (Half) type.
- Please refrain from viewing 3D images if you do not feel well or are experiencing visual fatigue.
  In the event that you experience dizziness, nausea, or other discomfort while viewing 3D images, discontinue use and rest your eyes.
- When “3D Type” (⇨ 80) is “Side by side” change the 3D setting on the TV too.
- Depending on the connected TV, the video being played back might switch to 2D video due to changes in resolution etc. Check the 3D setting on the TV.
- 3D video might not output as settings of “HDMI Video Format” (⇨ 81) and “24p Output” (⇨ 81).
- It may display as Side-by-Side (2 screen structure) when playback of the 3D video is started.
- Depending on the operation, the setting of the “Signal Format” may return to “Original” and the setting of the “3D Picture Mode” may return to “Normal” when the content is switched or some other operation is performed while viewing.

Deleting recorded titles

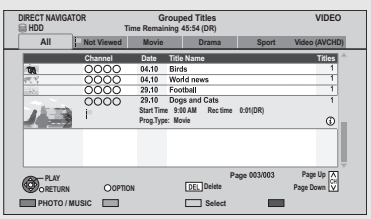
Once deleted, recorded content cannot be restored to its original state. Make certain before proceeding.

HDD

While stopped

1 Press [DRIVE SELECT], then select “HDD”.

2 Press [DIRECT NAVIGATOR].



3 Select the title, then press the “Yellow” button.

A check mark is displayed. Repeat this step.

- Press the “Yellow” button again to cancel.

4 Press [DEL].

5 Select “Delete”, then press [OK].

Deleting during play

① While playing

Press [DEL].

② Select “Delete”, then press [OK].

Editing recorded titles

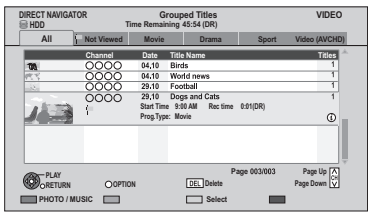
Once deleted, divided or partially deleted, recorded content cannot be restored to its original state. Make certain before proceeding.

- Depending on the type of file, some operations may not be possible.

HDD

1 Press [DIRECT NAVIGATOR].

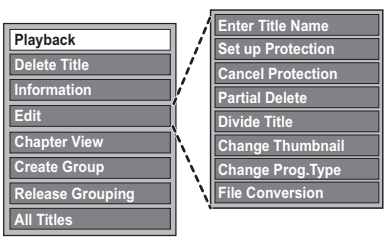
2 Select the title.



- **Multiple editing**
  Press the “Yellow” button.
  A check mark is displayed. Repeat this step.
  - Press the “Yellow” button again to cancel.

3 Press [OPTION].

4 Select the item, then press [OK].



- “Edit” has several functions (e.g., File Conversion).

Deleting

① Select “Delete Title”, then press [OK].

② Select “Delete”, then press [OK].

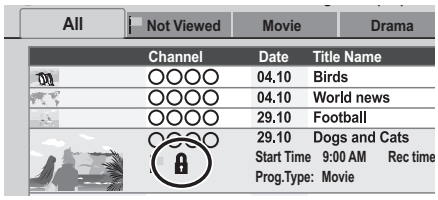
Entering title name

Select “Enter Title Name” in “Edit”, then press [OK].

(⇨ 66, Entering text)

Setting protection

Protection setting prevents the title from accidental deletion.

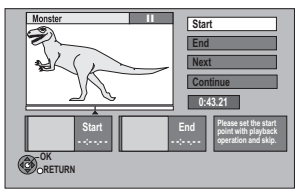


① Select “Set up Protection” or “Cancel Protection” in “Edit”, then press [OK].

② Select “Yes”, then press [OK].

appears when setting the protection.

Partial deleting



① Select “Partial Delete” in “Edit”, then press [OK].

② Press [OK] at the start point and end point to delete.

- Press [PLAY/×1.3 ▶] to start the playback when the title is paused.

③ Select “Continue”, then press [OK].

- Select “Next”, then press [OK] to delete other sections. Up to 20 sections can be set. (⇨ go to step ②)

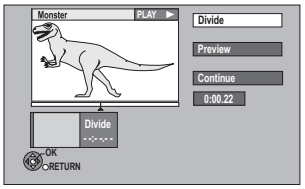
④ Select “Delete”, then press [OK].

- Chapter Mark is generated in the scene that was partially deleted.

⑤ Press [RETURN ⮌].

- You can find the desired point by using search or Time slip function, etc.
- You cannot set points if they are too close to each other. You cannot set an end point before a start point.

Dividing title



① Select “Divide Title” in “Edit”, then press [OK].

② Press [OK] at the point to divide the title.

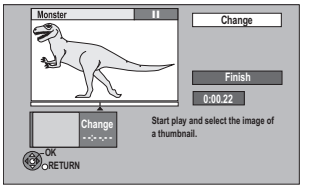
③ Select “Continue”, then press [OK].

④ Select “Divide”, then press [OK].

- **To confirm the division point**
  Select “Preview”, then press [OK]. (The unit plays 10 seconds before and after the division point.)
- **To change the division point**
  Restart play and select “Divide”, then press [OK] at the division point.

- Video and audio just before and after the division point may momentarily cut out.
- Divided titles form a grouped titles.
- You can find the desired point by using search or Time slip function, etc.

Changing thumbnail



① Select “Change Thumbnail” in “Edit”, then press [OK].

② Press [PLAY/×1.3 ►] to start play.

③ Press [OK] at the point to use as a thumbnail.

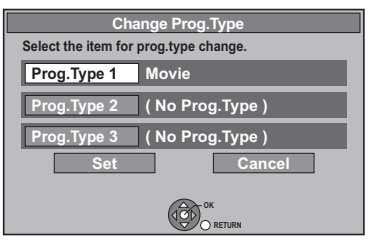
- **To change the point**
  Restart play and select “Change”, then press [OK] at the point to change.

④ Select “Finish”, then press [OK].

- You can find the desired point by using search or Time slip function, etc.

Changing programme type of title

Programme type information in the title can be edited.



① Select “Change Prog.Type” in “Edit”, then press [OK].

② Select the item to change a programme type, then press [OK].

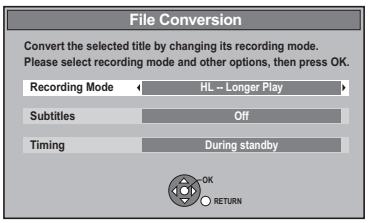
③ Select the programme type, then press [OK].

④ Select “Set”, then press [OK].

File Conversion

File Conversion is a function to convert the recording mode of the title in DR mode and AVCHD contents. The size of the converted title will be small regularly. It will take about the same time as the recorded duration.

① Select “File Conversion” in “Edit”, then press [OK].



② Select the recording mode (⇨ 8, 103), then press [▼].

③ Select whether to record the subtitle or not, then press [▼].

Automatic	Subtitles will be recorded for titles with subtitles. You cannot switch the subtitle on or off during the playback.
Off	Subtitle will not be recorded.

④ Select when to start the conversion, then press [OK].

Now	Conversion begins immediately after step ⑥. Recording and playback are impossible during conversion. Timer recording will not be performed during conversion.
During standby	Conversion will be performed after the unit is turned off in a time slot for which no timer recording is set.

⑤ Select whether to delete the original title or not, then press [OK].

Convert & Delete	The original title will be deleted to save HDD capacity after conversion.
Convert Only	The original title remains after conversion.

⑥ ■ “Now” conversion:
Select “Start”, then press [OK].

■ “During standby” conversion:
Press [OK].

- Conversion is performed when the unit is turned off.

“COPY” on the unit’s display remains lighted during conversion.

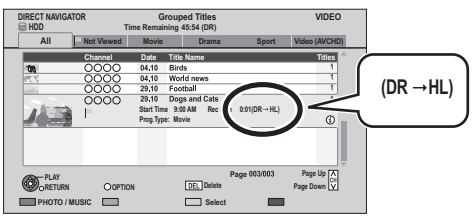
To cancel a “Now” conversion

Press and hold [RETURN ⮌] for more than 3 seconds.

To confirm whether the conversion is completed

Press [DIRECT NAVIGATOR].

e.g.,



When “○○ → ○○ (Recording mode for conversion)” is displayed, the conversion has not finished.

To cancel a “During standby” conversion

After performing steps 1–3 (⇨ 45)

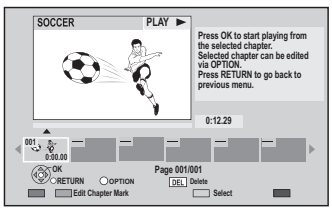
1 Select “File Conversion” in “Edit”, then press [OK].
2 Select “Yes”, then press [OK].

- To use “File Conversion”, the HDD needs enough storage capacity.
- The size of converted title might increase depending on the title (such as radio programmes).
- File Conversion is stopped when this unit is turned on during performing “During standby” conversion. Conversion will start from the beginning again once the unit is turned off.
- When converted, the audio content will be selected according to the following settings:
  – “Audio Type for Digital Broadcast” (⇨ 79)
  – “Audio for HG / HX / HE / HL / HM Recording” (⇨ 79)
- When converted, 3D information may not be retained.
- In titles with the Auto Renewal Recording function (⇨ 33) set, a programme may be unintentionally converted while in “During standby”.

Editing chapters

Select “Chapter View”, then press [OK].

Chapter View screen



■ **Edit Chapter Mark:**
Select the point where you want to start a new chapter while viewing the title.

① Press the “Green” button.

② Press [OK] at the point you want to divide.

- Repeat this step.

③ Press [RETURN ⮌] to go to Chapter View screen.

■ **To delete the chapter:**

① Select the chapter, then press [DEL].

- **Multiple editing**
  Select the chapter, then press the “Yellow” button.
  A check mark is displayed. Repeat this step until you select the chapters to be deleted.
  - Press the “Yellow” button again to cancel.

② Select “Delete”, then press [OK].

■ **To combine chapters (Delete chapter mark):**

① Select the chapter, then press [OPTION].

② Select “Combine Chapters”, then press [OK].

③ Select “Combine”, then press [OK].
The selected chapter is combined to the next chapter.

➢ **Playback from Chapter View (⇨ 40)**

Copying titles

You can copy titles to HDD from discs recorded by other Panasonic devices.

This unit cannot copy the titles in the HDD to the media. Be careful when deleting the original title after copying to the HDD.

BD-RE BD-R -RW(VR) +RW → HDD

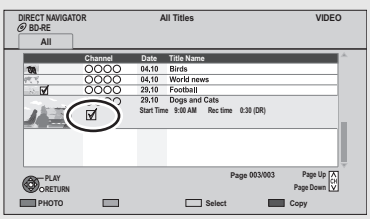
1 Insert a disc.

■ **If the menu screen appears:**
Select “Play Video”, then press [OK].

2 Select the title, then press the “Yellow” button.

A check mark is displayed. Repeat this step.

e.g., BD-RE



●Press the “Yellow” button again to cancel.

3 Press the “Blue” button.

●To change the detailed settings for copy, refer to Page 50.

4 Select “Start Copying”, then press [OK].

5 Select “Yes”, then press [OK] to start copying.

Copying titles with copying list

BD-RE BD-R -RW(VR) +RW → HDD

1 Insert a disc.

Stop the playback if it starts.

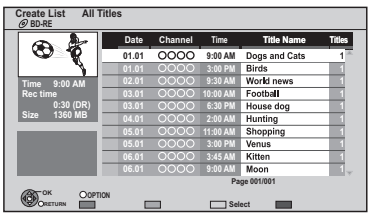
2 Press [FUNCTION MENU], then select “Copy” and press [OK].

3 Set the recording mode (⇨ 8, 103).

① Select “Copy Mode”, then press [►].
② Set “Recording Mode”.
③ Press [◄] to confirm.

4 Register titles for copy.

① Select “Create List”, then press [►].
② Select “New item”, then press [OK].
③ Select the titles, then press [OK].
e.g., BD-RE



(⇨ 51, Selecting the titles for the copying list)
④ Press [◄] to confirm.

5 Set other settings.

① Select “Other Settings”, then press [►].
② Select the copying option, then press [OK].

- **Subtitles**
  Select “Automatic” or “Off”, then press [OK].

③ Press [◄] to confirm.

6 Select “Start Copying”, then press [OK].

7 Select “Yes”, then press [OK] to start copying.

To cancel all registered copying settings and lists

After performing steps 1–2

1 Select “Cancel All”, then press [OK].
2 Select “Yes”, then press [OK].

➢ **To display the menu screen (⇨ 19)**

- Titles in the grouped titles and other titles cannot be registered simultaneously.

Copying video

Selecting the titles for the copying list

Select the item in step 4–③ (⇨ 50).

Press the “Yellow” button.

A check mark is displayed. Repeat this step until you select all necessary items.

- **Press the “Yellow” button again to cancel.**

The title will be copied in the order of the copying list. If you want to specify the order, edit the copying list after the items are selected. (⇨ right)

- **Other operation**

1 Press [OPTION].

2 Press [OK].

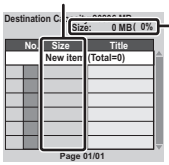
Information	Information is shown.

Copying list icons and functions

Copying list indicators

	Titles that cannot be copied in high speed mode
	Title contains photos ● Photos cannot be copied.
N (NTSC) **P (PAL)**	Title recorded using a different encoding system from that of the TV system currently selected on the unit. ● Titles displaying these marks cannot be selected.

Data size of each registered item



Size:

Data size recorded to the copy destination

- When copying at normal speed, the total data size will change according to the recording mode.
- The total data size shown may be larger than the sum of the data sizes for each registered item, because of data management information being written to the copy destination, etc.

Editing the copying list

Select the item after step 4–③ (⇨ 50).

1 Press [OPTION].

2 Select the operation, then press [OK].

Delete All	All titles that you registered to copy are deleted. **Select “Yes”, then press [OK].**
Add	Add new items to the copying list. **1 Select the title, then press the “Yellow” button.** A check mark is displayed. Repeat this step until you select all necessary items. ● Press the “Yellow” button again to cancel. **2 Press [OK].**
Delete	**Select “Yes”, then press [OK].**
Move	Move selected items or change the order of items on the copying list. **Select the destination, then press [OK].**

Notes for copying

Copyable media and copy speed

Original		Destination picture quality	Copy speed
Recording mode	Media		
DR	BD-RE BD-R	Original Picture Quality	High speed
		High Definition	Normal speed※1, 2
		Standard Definition	Normal speed※1
HG/HX/ HE/HL/HM	BD-RE BD-R	Original Picture Quality	High speed
		High Definition	Normal speed
		Standard Definition	Normal speed
XP/SP/LP/ EP/FR	BD-RE BD-R	Standard Definition	Normal speed
	-RW(VR)	Original Picture Quality	High speed
	+RW	Standard Definition	Normal speed

※1 Subtitles are optional.

※2 If programme has multi channel audio, priority is given to what you select. (⇨ 79, Audio for HG / HX / HE / HL / HM Recording)

■ When stopping the normal speed copy during copy

Copying will continue up to the point cancelled.

■ Notes for copying title recorded in 1080/50p or 1080/60p

It will copy in normal speed, and it cannot copy in progressive. (⇨ 108)

■ Notes for copying 3D programmes

- It may not display correctly in 3D when a copied 3D programme is played back. In such a case, change the “3D Settings” during the playback of the title. (⇨ 43, Convenient functions while viewing the 3D video)
- 3D information may not be copied.

Copying a finalised disc

DVD-V → HDD

While playing a disc, the content being played is copied to the HDD according to the set time.

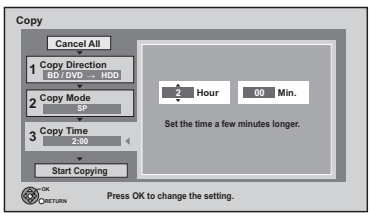
1 **Press [FUNCTION MENU].**

2 **Select “Copy”, then press [OK].**

3 **Set “Copy Time”.**

① Select “Copy Time”, then press [►].
② Select “Time Setting”, then press [OK].
③ Select “On”, then set the copying time.
- When copying all the content on the disc select “Off”.

④ Press [OK].



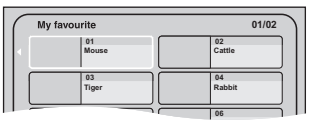
⑤ Press [◄] to confirm.

- Set a few minutes longer than the source title, in order to include the operation time before play begins.

4 **Select “Start Copying”, then press [OK].**

5 **Select “Yes”, then press [OK] to start copying.**

6 **When the Top Menu is displayed**
Select the title you want to start copying, then press [OK].



After the last title on the disc has finished playing the Top Menu is recorded until the set time is reached.

To stop copying

Press [STOP ■].

You can also press and hold [RETURN ⮌] for 3 seconds.

- If stopped partway, copying will be up to that point.

- Operations and on-screen displays during copy are also recorded.
- Almost all DVD-Video on sale have been treated to prevent illegal copying, and cannot be copied.
- The content is recorded as 1 title from the start of copy to the end.
- If play does not begin automatically press [PLAY/×1.3 ►] to start.

Playing photos

HDD BD-RE -R -R DL CD SD USB

- In order to play back 3D photo (MPO), this unit should be connected to a Full HD 3D compatible TV via an HDMI terminal.

1

■ HDD

① Press [FUNCTION MENU].

② Select “Photo” in “Playback Contents”, then press [OK].

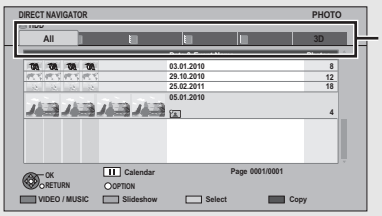
■ BD-RE -R -R DL CD SD USB

① Insert the disc, SD card or USB memory.

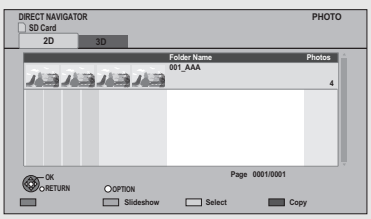
② Select “View Photos”, then press [OK].

2 Select the event, then press [OK].

e.g., HDD



e.g., SD



- **To select the label**
  Press [◄, ►].
- **Start Slideshow**
  1 Select a date or folder, then press the “Green” button.
  2 Select “Start Slideshow” then press [OK].
- **Switching the Calendar screen (HDD)**
  Press [PAUSE ❚❚].

3 Select the photo, then press [OK].

- Press [◄, ►] to display the previous or next photo.

To stop the Slideshow
Press [RETURN ⮌].

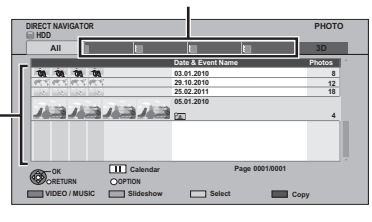
To exit the Calendar screen
Press [PAUSE ❚❚].

➢ **Slideshow Settings (⇨ 55)**

- You cannot play photos while recording or copying.
- It may take a few moments for photos to display.
- When there are many files and/or folders, some files may not be displayed or be playable.

■ DIRECT NAVIGATOR (PHOTO) screen

e.g., HDD



Event
It is displayed for each recording date.

- It is displayed for each folder for media other than HDD.

Screen icons:

(Label)	**Album (HDD)** Placing photos in albums of your choice makes it easier to find them. (⇨ 57)
3D (Label)	3D photos (MPO) are automatically sorted. Select from this label to playback in 3D. (It will playback in 2D when selected from other labels)
	Photo protected
	HDD New photo which is stored and not viewed

Switching to the VIDEO or MUSIC screens

HDD

①**While the DIRECT NAVIGATOR (PHOTO) screen displayed**
Press the “Red” button.

②**Select “VIDEO” or “MUSIC”, then press [OK].**

BD-RE

While the DIRECT NAVIGATOR (PHOTO) screen displayed
Press the “Red” button.

- The screen switches from “PHOTO” to “VIDEO”.

Photo play option

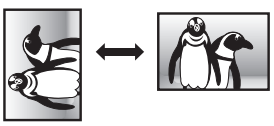
①**While displaying a photo**
Press [OPTION].

②**Select the item, then press [OK].**

Photo Menu

- **Start Slideshow**
  You can start a slideshow.

- **Rotate RIGHT, Rotate LEFT**



  - Rotation information will not be stored depending on the media.

- **Information**
  Information (shooting date etc.) is shown.

Aspect

You can switch the screen mode. (⇨ 87)

Graphic Display Level

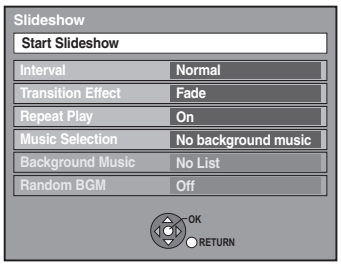
You can change the pop-up level of the screen display, etc., during the 3D photo playback.

Slideshow Settings

You can set the items for slideshow.

①**While displaying DIRECT NAVIGATOR (PHOTO)**
Press [OPTION].

②**Select “Slideshow”, then press [OK].**



Start Slideshow

You can start a slideshow.

Interval

You can setup the time until the next photo is to display.

Transition Effect

Effect for the next photo to display can be set.

- There is no effect when playing back in 3D.

Repeat Play

You can setup to playback repeatedly.

Music Selection

You can select background music on (either from HDD or USB) or off.

- There is no effect when playing back in 3D.

Background Music

You can select background music from HDD (My Favourites or Playlists) or USB (Folder).

- There is no effect when playing back in 3D.

Random BGM

You can playback the BGM in random order.

- There is no effect when playing back in 3D.

Editing photos

HDD SD

1 ■ HDD

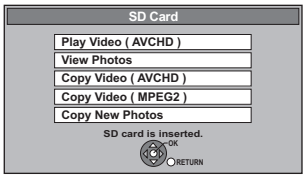
①Press [FUNCTION MENU].

②Select “Photo” in “Playback Contents”, then press [OK].

■ SD

①Insert the SD card.

e.g.,

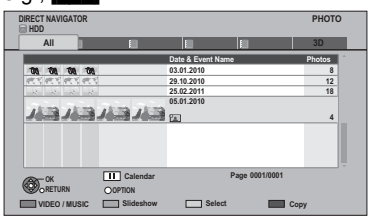


②Select “View Photos”, then press [OK].

2 ■ **Editing the event:**

Select the event, then press [OPTION].

e.g., HDD



■ **Editing the photo:**

①Select the event, then press [OK].

②Select the photos to edit, then press [OPTION].

● Multiple editing

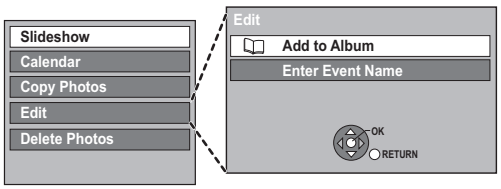
Select the item, then press the “Yellow” button. (Repeat this step.)

A check mark appears.

● Press the “Yellow” button again to cancel.

3 **Select the operation, then press [OK].**

e.g., HDD



● You cannot edit 3D photos.

Photo

Add to Album

HDD

① **While selecting "All" label:**
Select "Add to Album" in "Edit", then press [OK].

② **Select the destination album, then press [OK].**

③ **Press [OK].**

Combine Events

HDD

① **While selecting album label and select multiple events:**
Select "Combine Events" in "Edit", then press [OK].

② **Select "Yes", then press [OK].**

Remove from Album

HDD

① **While selecting album label:**
Select "Remove from Album" in "Edit", then press [OK].

② **Select "Yes", then press [OK].**

Enter Album name

HDD

While selecting album label:
Select "Enter Album Name" in "Edit", then press [OK].
(⇨ 66, Entering text)

Enter Event Name

Select "Enter Event Name" in "Edit", then press [OK].
(⇨ 66, Entering text)

Changing protection

SD

While selecting photo:
Select "Set up Protection" or "Cancel Protection", then press [OK].

🔒 appears when the protection is set.

- Even if the protection is set, the photo may be deleted by another unit.

Deleting

① **While selecting "All" label:**
Select "Delete Photos", then press [OK].

② **Select "Yes", then press [OK].**

Copying photos

Selecting and copying the photos

BD-RE -R -R DL CD SD USB → HDD
HDD BD-RE -R -R DL CD → SD

1 ■ HDD

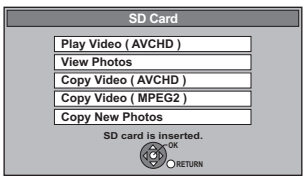
①Press [FUNCTION MENU].

②Select “Photo” in “Playback Contents”, then press [OK].

■ BD-RE -R -R DL CD SD USB

①Insert a disc, the SD card or USB memory.

e.g., SD

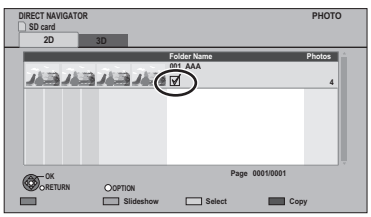


②Select “View Photos”, then press [OK].

2 **Select the event or the photo, then press the “Yellow” button.**

A check mark is displayed. Repeat this step.

e.g., SD



● Press the “Yellow” button again to cancel.

3 **Select all necessary items, then press the “Blue” button.**

4 BD-RE -R -R DL CD

Select the copying destination, then press [OK].

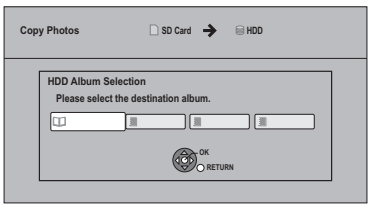
5 **When copy to HDD:**

Select “Yes” or “No”, then press [OK].

● **If you select “Yes”:**

Select the album, then press [OK].

● You can categorise and manage the events and photos on the HDD by copying to the album. (⇨ 54)



6 **Select “Yes”, then press [OK].**

Copying starts.

To stop copying

Press and hold [RETURN ⮌] for 3 seconds.

● The name of the copied photos will be changed.
● If the number of files/folders to be copied exceeds the maximum (⇨ 101), copying will stop partway through.

Photo

Copying automatically

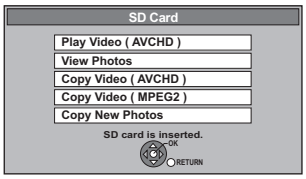
BD-RE **-R** **-R DL** **CD** **SD** **USB** → **HDD**

Newly added photos will automatically be copied to the HDD.

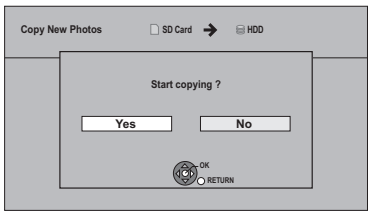
1 **While stopped**

Insert a disc, the SD card or the USB memory.

e.g., **SD**



2 **Select “Copy New Photos”, then press [OK].**



3 **Select “Yes”, then press [OK].**

Copying starts.

4 **Once the copy is completed, select “Yes” or “No”, then press [OK].**

To stop copying

Press and hold [RETURN ⮌] for 3 seconds.

- Photos without shooting date will be categorised using the creation date.
- If the space on the destination drive runs out or the number of files/folders to be copied exceeds the maximum (⇨ 101), copying will stop partway through.
- The name of the copied photos will be changed.

Playing music/Copying music to HDD

-R **-R DL** **CD** **USB**

- Music CD: Play only
- MP3: All tracks in the folder will be recorded. (Cannot record track-by-track.)
- It will be recorded as 1 album to the HDD in 1 recording.

1 **While stopped**

■ **Music CD**

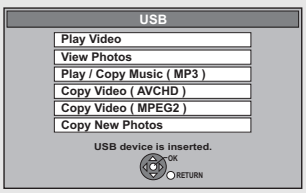
Insert a disc.

Playback will automatically start.

■ **MP3**

① Insert a disc or USB memory.

e.g., **USB**



- **-R** **-R DL** **CD** Playback will automatically start if only MP3 is recorded.

② Select “Play / Copy Music (MP3)”, then press [OK].

Playback will start.

2 ■ **To copy MP3 to HDD**

① Press the “Blue” button.

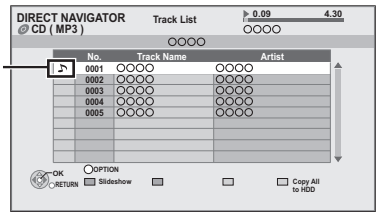
② Select “Copy”, then press [OK].

Copying starts.

To play other music (track)

Select the item, then press [OK].

e.g., MP3



To stop copying

Press and hold [RETURN ⮌] for 3 seconds.

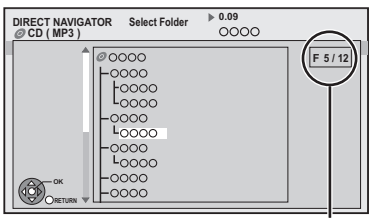
- The track/artist name will be displayed if the information is contained in ID3 tag of the MP3 file.
- If there is a large amount of photo data etc. within a MP3 file, play may not be possible.
- While copying, no other operations can be performed. Timer recordings will not proceed.
- The maximum number of tracks on HDD: 40000 (Depends on the remaining capacity.)

To find a folder (MP3 only)

①While the Track List is displayed

Press [OPTION].

②Select “Select Folder”, then press [OK].



Selected folder No. /Total folder

If the folder has no track, “– –” is displayed as folder number.

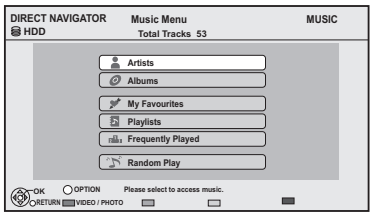
③Select the folder, then press [OK].

Music

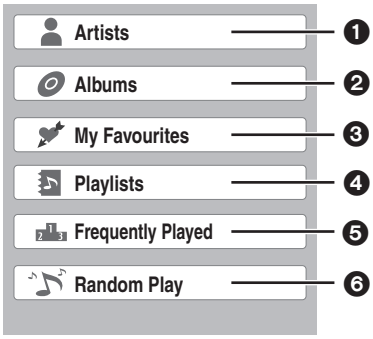
Playing music recorded on HDD

1 **When the HDD is selected**
Press [FUNCTION MENU].

2 **Select “Music” in “Playback Contents”, then press [OK].**



3 **Select the item, then press [OK].**



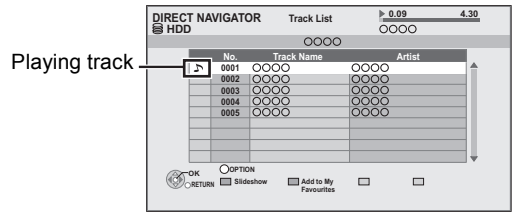
❶ Categorised by artist
❷ Categorised by album
❸ Tracks registered in “My Favourites”
❹ Tracks registered in “Playlists”
❺ Tracks most often played recently (up to 30 tracks)
❻ Random playback of all tracks

■ **When “Artists” is selected**
① Select the initial of the artist.
② Select the name of the artist, then press [OK].
③ Select the album, then press [OK].

■ **When “Albums” is selected**
① Select the initial of the album.
② Select the album, then press [OK].

■ **When “Playlists” is selected**
Select the playlist, then press [OK].

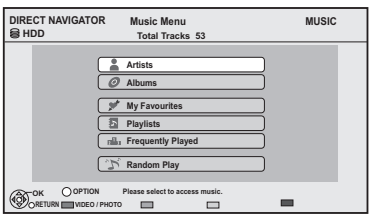
4 **Select the track, then press [OK].**



- You cannot play music tracks on HDD while copying.

Switching to the VIDEO or PHOTO screens

① **While the DIRECT NAVIGATOR (Music Menu) screen is displayed**



Press the “Red” button.

② **Select “VIDEO” or “PHOTO”, then press [OK].**

Operations during music play

HDD -R -R DL CD USB

Stop	**Press [STOP ■].**
Pause	**Press [PAUSE ❚❚].** Press [PAUSE ❚❚] again or [PLAY/×1.3 ▶] to restart play.
Search	**Press [SLOW/SEARCH ◀◀] or [SLOW/SEARCH ▶▶].** ● Press [PLAY/×1.3 ▶] to restart play.
Skip	**During play or while paused, press [SKIP ⏮] or [SKIP ⏭].** Skip to the track you want to play. ● Each press increases the number of skips.

Useful functions during music play

HDD -R -R DL CD USB

Registering a track to the “My Favourites”

HDD

While the Track List screen is displayed

Select the track, then press the “Green” button.

● Up to 99 tracks can be registered.

Information

HDD

While the Track List screen is displayed

①**Select the track.**

②**Press [OPTION].**

③**Select “Information”, then press [OK].**

Repeat Play
Random

Refer to “Repeat Play” or “Random” in Play menu (⇨ 72).

Re-master 1
Re-master 2

Refer to “Sound Effects” in Sound menu (⇨ 73).

Displaying photos (Slideshow)

Photos stored on the “Album” of the HDD can be played back as slideshow during playback of the music.

While playing the music

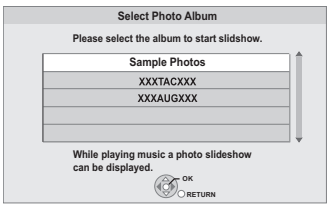
Press the “Red” button.

● **To change the photos to display**

① While slideshow playing
Press [OPTION].

② Select “Select Photo Album”, then press [OK].

③ Select the album, then press [OK].
e.g.,



To end the slideshow

Press [RETURN ⮌].

➢ **How to create the photo album (⇨ 57, Add to Album)**

➢ **To play music continuously even if the Power off link works (⇨ 68)**

Editing music/playlist

HDD

1 Press [FUNCTION MENU].

2 Select “Music” in “Playback Contents”, then press [OK].

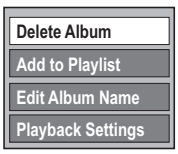
- When doing “Delete All Tracks”, “Clear My Favourites” or “Clear Frequently Played” (⇨ go to step 4).

3 Select the item, then press [OK].

4 Press [OPTION].

5 Select the item, then press [OK].

e.g., while selecting “Albums”



Deleting all tracks

■ **While displaying the “Music Menu” screen**

① Select “Delete All Tracks”, then press [OK].
② Select “Yes”, then press [OK].
③ Select “Delete”, then press [OK].

■ **While displaying the “Artists” screen**

① Select “Delete All Tracks”, then press [OK].
② Select “Delete”, then press [OK].

Deleting albums

■ **While displaying the “Albums” screen**

① Select “Delete Album”, then press [OK].
② Select “Delete”, then press [OK].

Deleting

■ **While displaying the “Track List” screen**

① Select “Delete”, then press [OK].
② Select “Delete”, then press [OK].

Editing the name

Select “Edit Album Name”, “Edit Track Name”, “Edit Artist Name” or “Edit Playlist Name”, then press [OK].

(⇨ 66, Entering text)

Removing all tracks

Tracks themselves are not deleted from the HDD.

■ **While displaying the “Playlists” screen**

① Select “Remove All Tracks”, then press [OK].
② Select “Remove”, then press [OK].

■ **While displaying the “Music Menu” screen**

① Select “Clear My Favourites” or “Clear Frequently Played”, then press [OK].
② Select “Clear”, then press [OK].

Removing tracks

■ **While displaying the “My Favourites”, “Track List” of “Playlists” or “Frequently Played” screen**

① Select “Remove”, then press [OK].
② Select “Remove”, then press [OK].

The selected track is removed.

Add to playlist

You can register your favourite albums and tracks into 10 preset playlists.

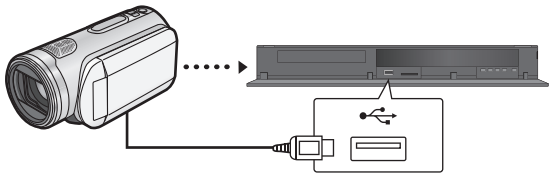
① Select “Add to Playlist”, then press [OK].
② Select the playlist, then press [OK].

- New playlist cannot be added.
- Up to 999 tracks can be registered to each playlist.

Copying the HD Video or the SD Video

This unit cannot copy the titles in the HDD to the media. Be careful when deleting the original title after copying to the HDD.

e.g., Connecting to the Panasonic video camera



USB connection cable
(specified cable such as accessories of the USB equipment)

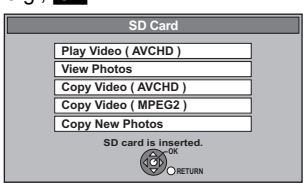
Copying HD Video (AVCHD format)

It is possible to copy the HD video (AVCHD format) recorded on the Panasonic video camera, etc. to the HDD.
AVCHD (Disc, **SD**, **USB**, video camera, etc.) → **HDD**

1 ■ **From video equipment**
Connect the video camera.
- Make the video camera ready for data transfer on the video camera.

■ **From a disc or an SD card**
Insert a disc or SD card.

e.g., **SD**



2 **Select “Copy Video (AVCHD)”, then press [OK].**

3 **Select the title, then press the “Yellow” button.**
A check mark is displayed. Repeat this step.
- Press the “Yellow” button again to cancel.
(All the recordings on the same date become a title.)

4 **Press [OK].**

5 **Select “Start”, then press [OK].**
- It may take time for the copying to start.

To stop copying
Press and hold [RETURN ⮌] for 3 seconds.

- Copy cannot be executed while recording or playback.
- An AVCHD title with 100 or more scenes will be divided into titles every 99th scene and copied.

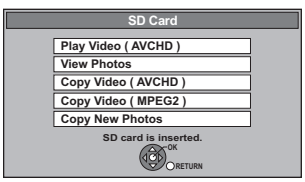
Copying SD Video (MPEG2 format)

It is possible to copy the SD video (MPEG2 format) recorded on the Panasonic video camera, etc. to the HDD.
SD, Panasonic video camera → **HDD**

1 ■ **From video equipment**
Connect the video camera.
- Select the appropriate mode that makes the video camera ready for data transfer on the video camera.

■ **From an SD card**
Insert an SD card.

e.g.,



2 **Select “Copy Video (MPEG2)”, then press [OK].**

3 **Select “Start Copying”, then press [OK].**

4 **Select “Yes”, then press [OK] to start copying.**

To stop copying
Press and hold [RETURN ⮌] for 3 seconds.

- You cannot playback SD Video on an SD card or in the HDD of the Panasonic video camera, etc. with this unit. You must copy the files to the HDD.
- You cannot playback or record while copying SD Video.

Media management

1 Press [FUNCTION MENU].

2 Select “Others”, then press [OK].

3 Select the item, then press [OK].

Card Management	SD
BD-Video Data Management	HDD

Format

SD

Formatting deletes all contents (including computer data), and they cannot be restored. Check carefully before proceeding.

The contents are deleted when you format a card even if you have set protection.

① Select “Format Card”, then press [OK].
② Select “Yes”, then press [OK].
③ Select “Start”, then press [OK].
④ Press [OK].

- **Do not disconnect the AC mains lead while formatting.** This can render the card unusable.
- When a card has been formatted using this unit, it may not be possible to use it on any other equipment.

Delete BD-Video data

HDD

If you no longer need BD-Live data recorded on the HDD, you can delete data with the following operation.

① Select “Delete BD-Video data”, then press [OK].
② Select “Yes”, then press [OK].
③ Select “Start”, then press [OK].
④ Press [OK].

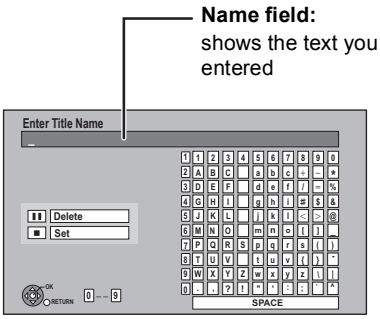
Entering text

Preparation

- Show the Enter Title Name screen.

1 Select a character, then press [OK].

Repeat this step to enter other characters.

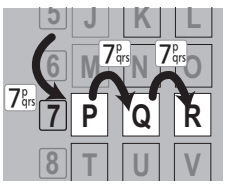


- **To delete a character**
  Select the character in the name field, then press [PAUSE ❚❚]. (The selected characters are deleted.)

- **To enter characters with number buttons**

  e.g., entering the letter “R”

  ① **Press [7] to move to the 7th row.**
  ② **Press [7] twice to highlight “R”.**
  ③ **Press [OK].**



2 Press [STOP ■] (Set).

“Writing...” appears then the screen returns to the DIRECT NAVIGATOR screen and so on.

To end partway

Press [RETURN ⮌].
Text is not added.

- If a name is long, parts of it may not be shown in some screens.

Enjoying VIERA CAST

You can access a selection of Internet services from the Home screen with VIERA CAST, such as YouTube, Picasa Web Albums. (Current as of February 2011)

Preparation

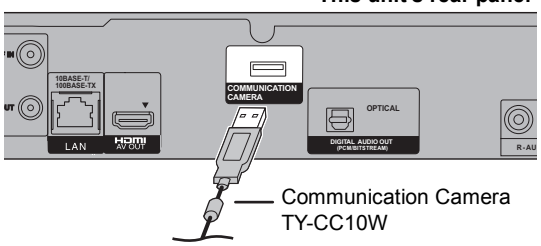
- Network connection (⇨ 14)
- Network Easy Setting (⇨ 21, 82)

■ **To enjoy video communication (ex. Skype™)**

- Connect this unit with optional Communication Camera (TY-CC10W or compatible equipment).
  Depending on the area, this optional camera may not be available. Please consult your local Panasonic dealer for advice.

e.g.,

This unit's rear panel



Communication Camera
TY-CC10W

- For operating method refer to the following website.
  http://panasonic.jp/support/global/cs/
  (This site is in English only.)
- Cannot be used while recording or copying.

1 Press [VIERA CAST].

- The video communication service can be accessed directly by pressing [S] button.
- The message is displayed. Please read these instructions carefully and then press [OK].

2 Select the item, then press [OK].

- Operable buttons:
  [▲, ▼, ◄, ►], [OK], [RETURN ⮌], coloured buttons and number buttons.

VIERA CAST Home screen;

e.g.,

Images are for illustration purpose, contents may change without notice.

To exit from VIERA CAST

Press [EXIT].

- When playing content from a disc, SD card or USB device VIERA CAST cannot be accessed.
- In the following cases, settings are possible using "Internet Content Settings" (⇨ 82)
  – When restricting the use of VIERA CAST.
  – When the audio is distorted.
- If using slow Internet connection, the video may not be displayed correctly. A high-speed Internet service with a speed of at least 6 Mbps is recommended.
- Be sure to update the software (firmware) when a software (firmware) update notice is displayed on the screen.
  If the software (firmware) is not updated, you will not be able to use the VIERA CAST function.
- VIERA CAST home screen is subject to change without notice.
- The services through VIERA CAST are operated by their respective service providers, and service may be discontinued either temporarily or permanently without notice. Therefore, Panasonic will make no warranty for the content or the continuity of the services.
- All features of websites or content of the service may not be available.
- Some content may be inappropriate for some viewers.
- Some contents of VIERA CAST may only be available for specific countries and may be presented in specific languages.
- If timer recording starts, VIERA CAST will stop.

VIERA Link functions

What is VIERA Link “HDAVI Control”?

VIERA Link “HDAVI Control” is a convenient function that offers linked operations of this unit, and a Panasonic TV (VIERA) or receiver under “HDAVI Control”. You can use this function by connecting the equipment with the HDMI cable. See the operating instructions for connected equipment for operational details.

Preparation

1 Connect this unit to your TV or receiver using an HDMI cable. (⇨ 12)
2 Set “VIERA Link” to “On” (⇨ 81). (The default setting is “On”.)
3 Set the “HDAVI Control” operations on the connected equipment (e.g., TV).
- **Set the input channel on the VIERA to suit the terminal to be used as “HDAVI Control”.**

4 Turn on all “HDAVI Control” compatible equipment, then select this unit’s input channel on the connected TV so that the “HDAVI Control” function works properly.

- **Also when the connection or settings are changed, repeat this procedure.**

Download from TV※1

When you connect the unit to a TV for the first time, the setting information on the TV is acquired by this unit. (⇨ 20)

Automatic input switching Power on link

When the following operations are performed, the TV will automatically switch the input channel and display the corresponding action. Additionally when the TV is off, the TV will automatically turn on.

– When play starts on the unit
– When an action that uses DIRECT NAVIGATOR or FUNCTION MENU etc, is performed

Power off link

When you set the TV to standby mode, the unit is also automatically set to standby mode.

- Power off link function does not work when recording, copying etc.

Playing music continuously even after turning off power to the TV※2

The following operations make it possible to keep the power of the unit on and to play music continuously.
When the unit is directly connected to an amplifier/receiver.

① **While playing music**
Press [OPTION].

② **Select “TV Power Off”, then press [OK].**

- Sound may be discontinued for several seconds when the power to the TV is turned off.

PAUSE LIVE TV※1

You can operate this unit with the TV remote control.
Refer to “PAUSE LIVE TV” on page 27.

Direct TV Recording※1

This function allows you to immediately start recording the programme that you are viewing on the TV.

Refer to the TV operating instructions for operation.

- This unit will record the programmes in DR mode once, and then automatically convert to the selected recording mode while this unit is in standby. (⇨ 28)

Easy control only with VIERA remote control※2

You can operate this unit using the TV remote control.
Refer to the operating instructions of the TV about the buttons that you can use.

Using the OPTION menu

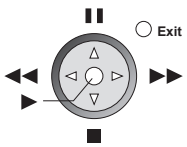
① Press [OPTION] on the TV remote control.
② Select the item, then press [OK].

e.g.,

■ Control Panel

Using the Control Panel, you can operate with the TV remote control.
Select "Control Panel" from the OPTION menu.

Control Panel



※1 This function is available with the TV that supports "HDAVI Control 3" or later.
※2 This function is available with the TV that supports "HDAVI Control 2" or later.

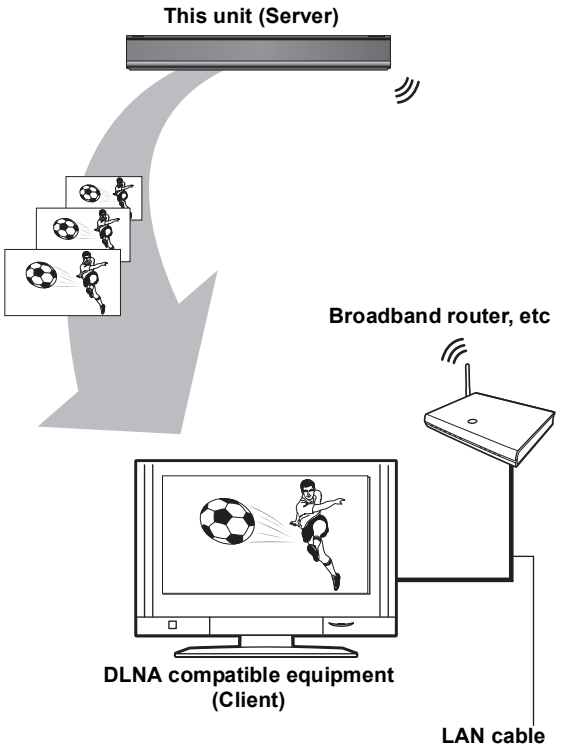
- This unit supports "HDAVI Control 5" function.
  "HDAVI Control 5" is the newest standard (current as of December, 2010) for Panasonic HDAVI Control compatible equipment. This standard is compatible with Panasonic's conventional HDAVI equipment. Please refer to individual manuals for other manufacturers' equipment supporting VIERA Link function.
- VIERA Link "HDAVI Control", based on the control functions provided by HDMI which is an industry standard known as HDMI CEC (Consumer Electronics Control), is a unique function that we have developed and added. As such, its operation with other manufacturers' equipment that supports HDMI CEC cannot be guaranteed.
- These functions may not work normally depending on the equipment condition.
  About "HDAVI Control" function, read the manual of the connected equipment (e.g., TV) too.
- Use the remote control supplied with this unit if you cannot operate this unit using buttons on the TV remote control.
- The operation of this unit may be interrupted when you press incompatible buttons on the TV remote control.

Playing contents from other equipment (Server)

You can enjoy the video and photos saved on the HDD of this unit on DLNA (Client) compatible equipment connected via a network.

- You cannot playback music from the playback equipment (Client).

e.g.,



For details regarding the connection and operation of equipment connected via a network, refer to their respective operating instructions.

Preparation

- Network connection (⇨ 14)
- Network Easy Setting (⇨ 21, 82)
- When DLNA (Server) Function is deactivated, make the settings. (⇨ 83, Home Network (DLNA) Server Settings)

1 Operate the playback equipment (Client) to display the list of titles on this unit.

- Refer to their respective operating instructions.

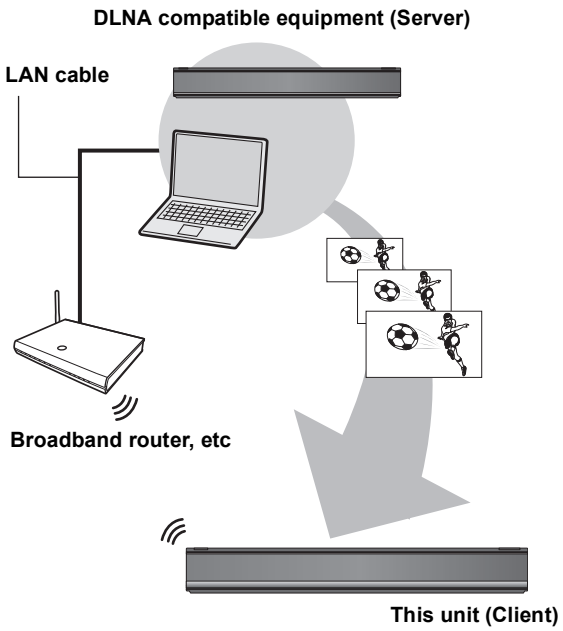
2 Select the item to playback (folder), then press [OK].

- Ensure that the router for your home network has adequate security system to prevent unauthorized access.
- The DLNA compatible device that is to be connected to the unit should be connected to the same hub or broadband router as the unit.
- Files not on the HDD cannot be played back.
- Playing back 3D video recorded on this unit may not work properly.
- Editing is not possible.
- Following titles can not be played back:
  - A title with remote access restriction
  - A title currently being recorded on DIGA
  - A title with audio only format
  - A title with incompatible format
- Playback via DLNA compatible equipment may not be performed when this unit is in the following conditions:
  - While simultaneously recording 2 programmes
  - While playing back a BD-Video
  - While simultaneously performing High speed copy and recording
  - While displaying the Setup menu
  - While executing functions using a network, such as “VIERA CAST”
- There may be some video that cannot be played back on DLNA compatible equipment depending on the equipment.
- You cannot playback simultaneously from 2 or more items of DLNA compatible equipment.

Playing contents on other equipment (Client)

You can enjoy viewing video, photos and music saved on a DLNA Certified media server (such as a PC with Windows 7 installed etc.) connected via a network with this unit. You also can enjoy viewing them with Panasonic DLNA compatible recorders (DIGA).

e.g.,



Preparation

- Network connection (⇨ 14)
- Network Easy Setting (⇨ 21, 82)

- Perform Home Network settings of the DLNA compatible equipment (Server).
  - **When connected to a PC with Windows 7 installed**
    Add the contents and folder to the Windows Media® Player library.
    Playlist of Windows Media® Player can play back only the contents that are stored in the libraries.
    Regarding setting method of Windows 7 refer to its instructions or help.
  - **When connected to a Panasonic DLNA compatible recorder (DIGA)**
    When a message requesting operation of the equipment to be registered is displayed, perform steps 1-4.
    - The countries where DIGA is available are limited. Refer to following site for availability.
      http://panasonic.jp/support/global/cs/

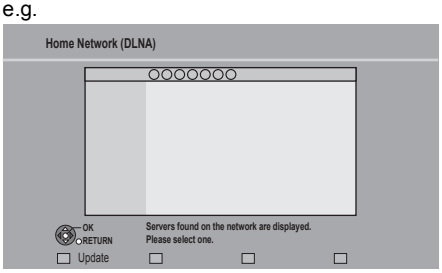
For details about the setting and operation method of connected equipment, and compatible equipment, refer to the following Website and the operating instructions for each item of equipment.
http://panasonic.jp/support/global/cs/
(This site is in English only.)

1 Press [FUNCTION MENU].

2 Select “Home Network (DLNA)” in “Network”, then press [OK].

- A list of equipment connected via the network is displayed.
- This list can be updated by pressing the “Red” button.

e.g.



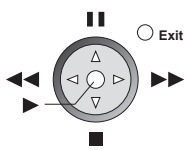
3 Select the equipment to playback the contents, then press [OK].

4 Select the item to playback (folder), then press [OK].

- Menu structure will be different depending on the equipment connected to this unit. Select the contents by repeating the operation.
- Convenient functions can be used by pressing [OPTION] or [DISPLAY] depending on the contents.

- **Control Panel**
  Control Panel is displayed once the playback starts. Operation can be performed with [▲, ▼, ◄, ►], [OK] and [EXIT].
  - Press [OK] if the Control Panel is not displayed.
  - Press [RETURN ⮌] to hide the Control Panel.

e.g.



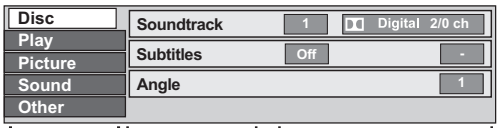
- Depending on the contents and the connected equipment, playback may not be possible.
- While playing back the 3D programme, you cannot set “3D Settings”. (⇨ 43)
- Items displayed in grey on the display cannot be played back by this unit.
- Depending on the performance of the connected PC, video frames may be dropped during playback, or video may not playback at all.

Playback menu

Common procedures

① Press [DISPLAY].

e.g.,



- The menu is not displayed when playing photos.

② Select the menu, then press [►].

③ Select the item, then press [►].

④ Select the setting.

- Some items can be changed by pressing [OK].

To clear the Playback menu

Press [EXIT].

Depending on the condition of the unit (playing, stopped, etc.) and media contents, there may be some items that you cannot select or change.

Disc menu—Setting the disc content

Video

The original video recording method (MPEG-4 AVC etc.) appears.

Signal Type

- **Primary Video**

Video	The original video recording method appears.
Soundtrack	Select the type of audio or language.

- **Secondary Video**

Video	Select on/off of images. The original video recording method appears.
Soundtrack	Select on/off of audio and the language.

Soundtrack※

Show or change the soundtrack.

Subtitles※

Turn the subtitle on/off, and change the language depending on the media.

Audio Selection

Switch in the case of multiple audio.

Subtitle Style

Select the subtitle style recorded on the disc.

Angle※

Change the number to select an angle.

Audio Channel

Change audio (LR/L/R) during playback.

※ With some discs, you may only be able to make changes using the menus (⇨ 36) on the disc.

Audio attribute

LPCM/Digital/Digital+/TrueHD/DTS/DTS-HD/MPEG:	Signal type
k (kHz):	Sampling frequency
b (bit):	Number of bits
ch (channel):	Number of channels

Language

ENG: English	DAN: Danish	THA: Thai
FRA: French	POR: Portuguese	POL: Polish
DEU: German	RUS: Russian	CES: Czech
ITA: Italian	JPN: Japanese	SLK: Slovak
ESP: Spanish	CHI: Chinese	HUN: Hungarian
NLD: Dutch	KOR: Korean	FIN: Finnish
SVE: Swedish	MAL: Malay	∗: Others
NOR: Norwegian	VIE: Vietnamese	

Play menu—Change the play sequence

Repeat Play

(Only when the elapsed time is being displayed on the unit's display.)

Select the item which you want to repeat. The items displayed differ depending on the type of media.

Select "Off" to cancel.

Random

(Only when playing music)

Select whether to play random or not.

Graphic Display Level

You can change the pop-up level of the playback settings display, etc., during the 3D playback.

- This cannot be set when "3D Type" (⇨ 80) is set to "Side by side" or "2D to 3D".

Picture menu—Change the picture quality

Mode

Select the picture quality mode during play.

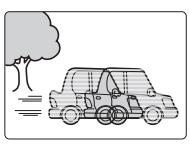
Normal	Default setting
Soft	Soft picture with fewer video artifacts
Fine	Details are sharper
Cinema	Mellows movies, enhances detail in dark scenes.
Cartoon	A mode suitable for viewing animations.

Advanced Settings

HD optimizer	It will compensate the mosaic noise in the video and haze around the characters precisely.
Chroma Process	You can enjoy high definition and full texture video by processing the HDMI colour signals in high precision during playback.
Detail Clarity	The picture becomes sharp and detailed.
Super Resolution	Standard picture quality video is corrected to sharp and crisp picture quality when it is output as 1080i/1080p from the HDMI terminal.

Progressive

Select the method of conversion for progressive output to suit the type of title being played. (⇨ 108)

Auto	Automatically detects the film and video content, and appropriately converts it.
Video	Select when using “Auto”, and the content is distorted.
Film	Select this if the edges of the film content appear jagged or rough when “Auto” is selected. However, if the video content is distorted as shown in the illustration to the right, then select “Auto”. 

Sound menu—Change the sound effect

Sound Effects

- This function is effective when “Digital Audio Output” is set to “PCM”. (⇨ 79)

Re-master 1	(Discs recorded at 48 kHz or less)
Re-master 2	Sound becomes more natural by adding higher frequency signals not recorded on the track.

Dialogue Enhancer

The volume of the centre channel is raised to make dialogue easier to hear.

Other menu—Change the display position

Position

Change where this menu screen appears on your TV.

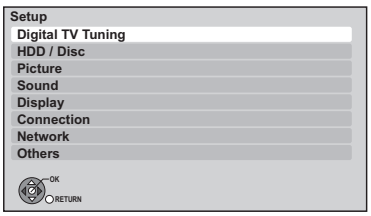
Changing the unit's settings

You can change the unit's settings using the Setup menu.
- The settings remain intact even if you switch the unit to standby.

Common procedures

1 **Press [FUNCTION MENU].**

2 **Select the "Setup" in "Others", then press [OK].**



3 **Select the menu, then press [OK].**

4 **Select the item, then press [OK].**

5 **Select the option, then press [OK].**
- Follow the instruction on the screen if the operation method is different.
- Depending on the connection or the status of this unit some items cannot be selected or changed.

■ About the PIN

PIN is required to change the following settings. Enter the 4-digit PIN following the on-screen instructions.
- The PIN is common for the following items.

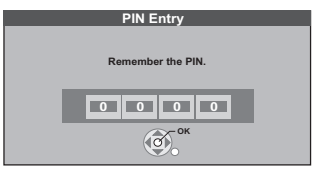
– Child Lock (Parental Rating)
– BD-Video Parental Control
– DVD-Video Parental Control
– Lock (Internet Content Settings)

PIN can be changed via the "PIN Entry" in "Others". (⇨ 84)

① Select the number, then press [►].
- You can also use the number buttons.

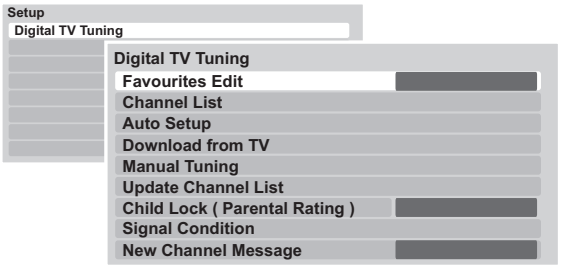
② Repeat step ① to enter 4-digit PIN.
③ Press [OK] to confirm.

e.g., PIN Entry



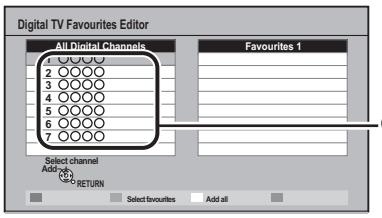
- **Make a note of PIN in case you forget it.**

Digital TV Tuning



■ Favourites Edit

You can create four Favourites of channels for making viewing and recording easier.



Channel names

After editing as follows, save the Favourites.
Press [RETURN ⮌], then press [OK].

- **To select the other Favourites list**

Press the "Green" button.

- **To add channels to the Favourites list**

① Select the channel in the "All Digital Channels" column, then press [OK]. Repeat this step.
- "Yellow": Add all the available channels to the Favourites. (This function is available only when there are no channels in the "Favourites".)

- **To change the order of the channels list**

① Select the channel in the "Favourites" column to move, then press the "Green" button.
② Select the new position, then press the "Green" button.

- **To delete channels**

① Select the channel in the "Favourites" column, then press [OK].
- "Yellow": Delete all channels.

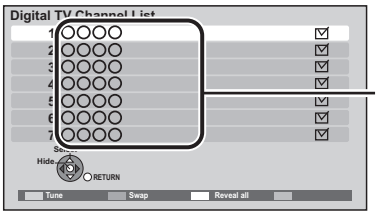
- **To change the name of the Favourites list**

① Press the "Red" button in the "Favourites" column.
② Press [▲, ▼, ◄, ►] to select a character, then press [OK].
Repeat this step to enter other characters.
- "Red": Delete a character.
- "Blue": Delete all characters.

③ Press [RETURN ⮌].

■ Channel List

You can edit the Channel List.



●To skip unwanted channels

① Select the channel.

② Press [OK].

The check mark is removed.

●"Yellow" : Clear the all skip setting.

●To change the channel number assignment

① Select the channel, then press the "Green" button.

② Enter the channel number to reassign with the number buttons.

③ Press [OK].

●If another channel is already assigned to the channel number, the two channels will be switched.

●To set the channel manually

Press the "Red" button.

"Digital TV Manual Tuning" screen appears. (⇨ right, Manual Tuning)

■ Auto Setup

You can restart the Auto Setup. (⇨ 20)

Select "Yes", then press [OK].

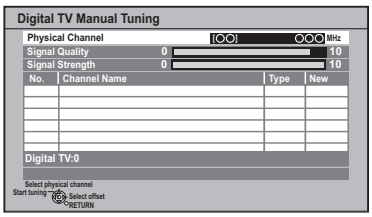
■ Download from TV

Select "Download from TV" when you connect the unit to a VIERA Link (HDAVI Control 3 or later) compatible TV with an HDMI cable.

Select "Yes", then press [OK].

■ Manual Tuning

You can set each channel manually.



① Select the channel.

② Adjust the frequency.

●Adjust the frequency by checking the signal strength and signal quality displays.

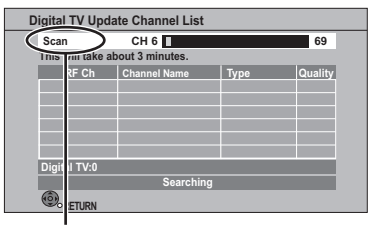
③ Press [OK] to start scan.

The set channel is displayed in the table.

■ Update Channel List

You can update channels to the latest one.

●This takes about 3 minutes.



"Finished" is displayed when the search is finished.

Press [RETURN ⮌].

■ Child Lock (Parental Rating)

You can restrict the viewing and recording of channels unsuitable to children.

Set a ratings level to limit broadcast viewing and playback.

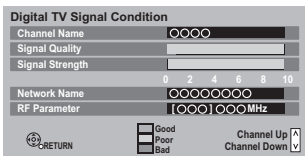
●Follow the on-screen instructions.

●PIN is required to change. (⇨ 74)

■ Signal Condition

You can check the quality and strength of signals.

Press [CH ∧ ∨] to select the channel.



Signal Quality

Red bar	The signal quality is bad.
Yellow bar	The signal quality is poor.
Green bar	The signal quality is good.

Signal Strength

0	Signal strength is 0%.
10	Signal strength is 100%.

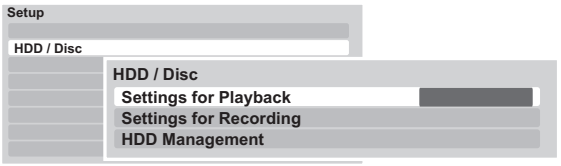
- When the signal is too strong (red bar), reduce the signal amplification at your aerial.

■ New Channel Message

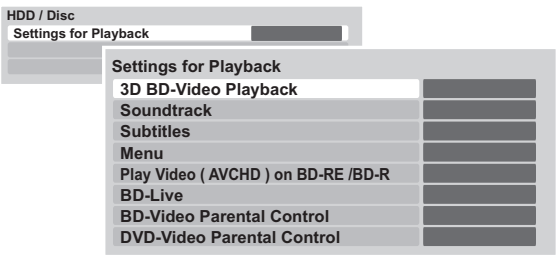
Set whether to obtain the information automatically when a new digital channel is added.

- After performing "Update Channel List" or "Manual Tuning" if the channel number has already been assigned, channel number for the newly tuned channel will be assigned from 800ch onward.

HDD / Disc



■ Settings for Playback



➢ 3D BD-Video Playback

Select the playback method of 3D compatible video software.

➢ Soundtrack

Select the audio language.

- If "Original" is selected, the original language of each disc will be selected.
- Enter a code with the number buttons when you select "Other ∗∗∗∗". (⇨ 85, Language code list)

➢ Subtitles

Select the language for subtitle.

- If "Automatic" is selected and the language selected for "Soundtrack" is not available, subtitles of that language will automatically appear if available on that disc.
- Enter a code with the number buttons when you select "Other ∗∗∗∗". (⇨ 85, Language code list)

➢ Menu

Select the language for disc menus.

- Enter a code with the number buttons when you select “Other ✳✳✳✳”. (⇨ 85, Language code list)

➢ Play Video (AVCHD) on BD-RE / BD-R

Set when you are playing a disc that has High Definition video (AVCHD) recorded by the Panasonic video camera, etc. and High Definition quality title that was recorded on this unit.

On	Playback High Definition video (AVCHD)
Off	Playback High Definition quality title

➢ BD-Live

You can restrict Internet access when BD-Live functions are used.

- If “On (Limit)” is selected, internet access is permitted only for BD-Live contents which have content owner certificates.

➢ BD-Video Parental Control

Set an age limit of BD-Video play.

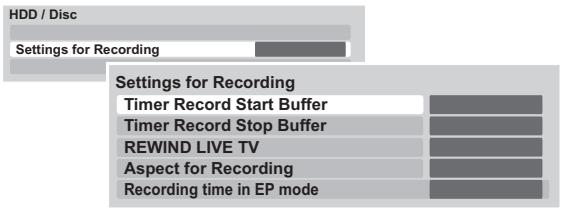
- Follow the on-screen instructions.
- PIN is required to change. (⇨ 74)

➢ DVD-Video Parental Control

Set a rating level to limit DVD-Video play.

- Follow the on-screen instructions.
- PIN is required to change. (⇨ 74)

■ Settings for Recording



➢ Timer Record Start Buffer

This function sets the timer recording to start earlier than the TV Guide time.

➢ Timer Record Stop Buffer

This function sets the timer recording to stop later than the TV Guide time.

➢ REWIND LIVE TV

Turn on/off the REWIND LIVE TV function.

- To set “On”, please set “Automatic Standby” to the setting other than “Off” (⇨ 83)

➢ Aspect for Recording

Sets the aspect ratio when recording or copying except in DR mode.

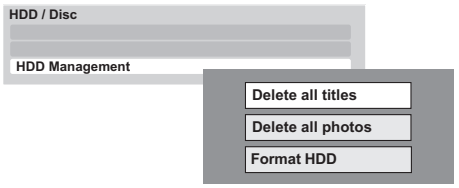
- If “Automatic” is selected, the title will be recorded with the original aspect ratio at the time when recording started (including when recording started at a commercial, etc.).

➢ Recording time in EP mode

Select the maximum number of hours for recording in EP mode (⇨ 103, Recording modes and approximate recording times).

■ HDD Management

Press and hold [OK] for 3 seconds to show the following settings.



➢ Delete all titles

Delete all titles (video) on the HDD.

- Delete does not work if one or more titles are protected.

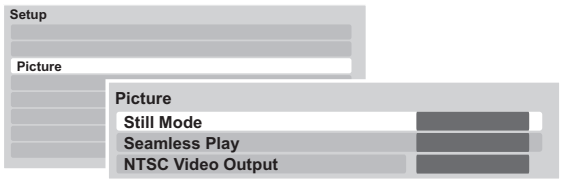
➢ Delete all photos

Delete all photos on the HDD.

➢ Format HDD

Formatting deletes all contents, and they cannot be restored. Check carefully before proceeding.

Picture



■ Still Mode

Select the type of picture shown when you pause play (⇨ 107, Frames and fields).

Automatic	
Field	Select if jittering occurs when "Automatic" is selected. (The picture is coarser.)
Frame	Select if small text or fine patterns cannot be seen clearly when "Automatic" is selected. (The picture is clearer and finer.)

■ Seamless Play

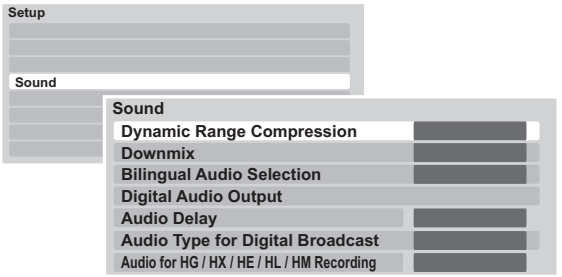
Select the play mode between playlist chapter segments and partially deleted titles.

- If you set "On" the chapters in playlists are played seamlessly. This does not work when there are several audio types included on the playlist and when using Quick View (PLAY × 1.3).

■ NTSC Video Output

Select how to output the NTSC image.

Sound



■ Dynamic Range Compression

BD-V DVD-V

Change the dynamic range for late night viewing.

■ Downmix

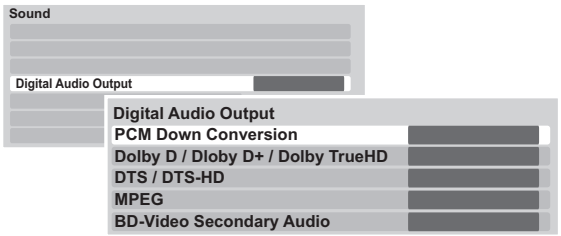
Select the downmix system of multi-channel to 2-channels sound.

- Select "Surround encoded", when the connected equipment supports the virtual surround function.
- There is no effect on "Bitstream" via HDMI AV OUT and DIGITAL AUDIO OUT terminal.
- The audio will be output in "Stereo" in the following cases.
  - AVCHD playback
  - BD-V: Playback of clicking sound on the menu and audio with secondary video in picture-in-picture mode

■ Bilingual Audio Selection

Select whether to record the audio type ("M1" or "M2") when converting the recording mode. (⇨ 47)

■ Digital Audio Output



➢ PCM Down Conversion

Select how to output audio with a sampling frequency of 96 kHz.

- It will be converted to 48 kHz regardless of the setting in the following cases.
  - The signals have a sampling frequency of over 96 kHz.
  - The disc has copy protection.
  - "BD-Video Secondary Audio" is set to "On". (BD-V)
- If "Off" is selected, signals are output as 96 kHz
- If "On" is selected, signals are converted to 48 kHz. (Choose when the connected equipment cannot process signals with a sampling frequency of 96 kHz.)

➢ Dolby D / Dolby D + / Dolby TrueHD

➢ DTS / DTS-HD

➢ MPEG

Select the audio signal to output.

- Select "PCM" when the connected equipment cannot decode the respective audio format.
- Not making the proper settings may result in noise.

➢ BD-Video Secondary Audio

(BD-V with secondary audio)

Turn on/off the clicking sound on the menu and audio with secondary video.

If "Off" is selected, the primary audio only is output.

■ Audio Delay

Mis-sync between the video and audio is corrected by delaying the audio output.

■ Audio Type for Digital Broadcast

If the programme has more than one track (Dolby Digital, MPEG, etc.), you can set priorities.

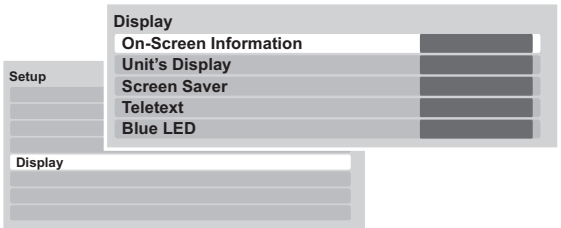
- This setting will give effect in the following conditions.
  - The default setting when watching broadcasts.
  - The default setting when playing back the title recorded in DR mode.
  - File Conversion (⇨ 47)
  - Normal speed copy from the title recorded in DR mode. (⇨ 50, 52)

■ Audio for HG / HX / HE / HL / HM Recording

If the programme has multi channel audio, priority is given to what you select.

- This setting will give effect in the following cases.
  - File Conversion (⇨ 47)
  - Normal speed copy in HG, HX, HE, HL or HM mode from a title recorded in DR mode. (⇨ 50, 52)

Display



■ On-Screen Information

Select the approximate time until the channel information screen (⇨ 25) disappears automatically.

■ Unit's Display

Changes the brightness of the unit's display.

- If "Dim" is selected the display turns dark during play and disappears when the unit is turned off. It reappears momentarily if a button is pressed. While using this mode, the standby power consumption can be reduced.

■ Screen Saver

This is to prevent burn-in on the screen.

- If "On" is selected, the masked-off area on the screen becomes grey.

Depending on the condition of the unit (Connection, Setting) the masked-off area on the screen becomes grey.

■ Teletext

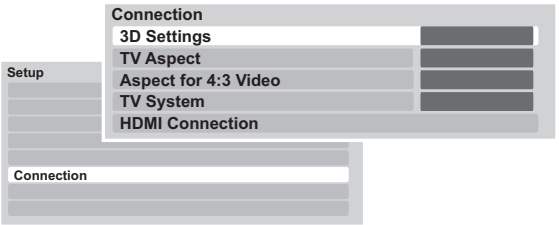
Select the Teletext (⇨ 25) display mode.

■ Blue LED

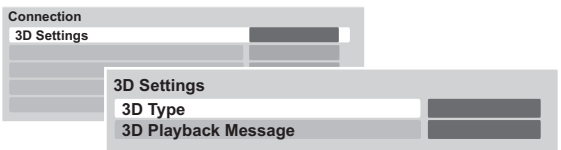
Set the lighting method for the lamp on the SD card slot.

- If "SD inserted" is selected, when this unit is turned on and SD card is inserted, the lamp is lighted.

Connection



■ 3D Settings



➢ 3D Type

If 3D video cannot be played back in 3D, change the settings as required by the connected TV format.

- Change the settings for 3D on the TV also when "Side by side" is selected.

➢ 3D Playback Message

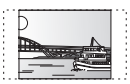
Set to display or hide the 3D viewing warning screen when playing back the 3D compatible video software.

■ TV Aspect

Set to match the type of TV connected.

- **Pan & Scan**

  Side picture is trimmed for 16:9 picture. The pictures may be shown in the letterbox style depending on the content.



- **Letterbox**

  Black bands appear for 16:9 picture.

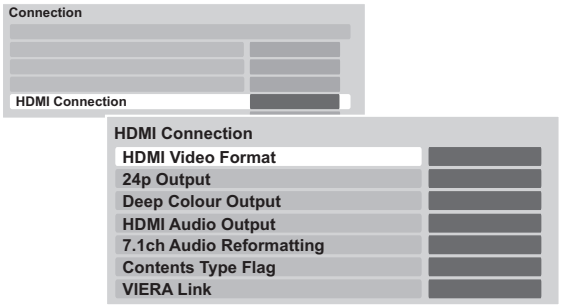
■ Aspect for 4:3 Video

To play a 4:3 title, set how to show pictures on a 16:9 widescreen TV.

■ TV System

Set in accordance with the TV System for the connected TV.

■ HDMI Connection



➢ HDMI Video Format

You can only select items compatible with the connected equipment.

- If “Automatic” is selected, the output resolution best suited to the connected TV (1080p, 1080i, 720p or 576p/480p) is automatically selected.
- To enjoy High Quality Video up-converted to 1080p, you need to connect the unit directly to 1080p compatible HDTV. If this unit is connected to an HDTV through other equipment, it must also be 1080p compatible.

➢ 24p Output

When playing BD-Video recorded in 24 frames, this unit displays each frame at 1/24 second intervals–the same interval originally shot with the film movie.

- This item is effective only when this unit is connected to a TV supporting 1080/24p output using an HDMI cable and “HDMI Video Format” is set to “Automatic” or “1080p”.
- When BD-Video images other than 24p are played, images are output at 60p.

➢ Deep Colour Output

This setting is for selecting whether to use Deep Colour output when a TV that supports Deep Colour is connected.

➢ HDMI Audio Output

Select “Off” when connected to a TV with an HDMI cable, and connected to an amplifier not compatible with HDMI with a DIGITAL AUDIO OUT terminal

➢ 7.1ch Audio Reformatting

BD-V

Surround sound with 6.1 ch or less is automatically expanded and played back at 7.1 ch.

- If “Off” is selected, sound is played over the original number of channels. (Note that in the case of 6.1 ch audio, playback will be at 5.1 ch)

Audio reformatting is enabled in the following cases:

– When you have selected “PCM” in “Digital Audio Output”.
– When the audio is Dolby Digital, Dolby Digital Plus, Dolby TrueHD or LPCM.

➢ Contents Type Flag

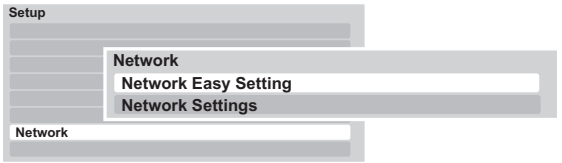
Depending on the playback content, the TV will output adjusting to the optimal method when a TV that supports Contents Type Flag is connected.

➢ VIERA Link

Set to use “HDAVI Control” function when connected with an HDMI cable to a device that supports “HDAVI Control”.

- Select “Off” when you do not want to use “HDAVI Control”.

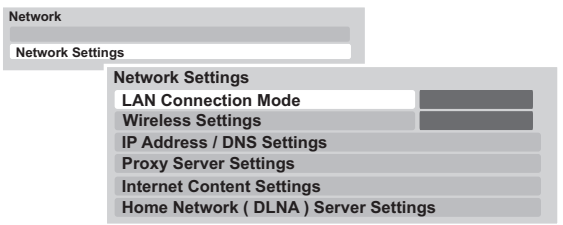
Network



■ Network Easy Setting

Press [OK] to start Network Easy Setting. (⇨ 21)

■ Network Settings

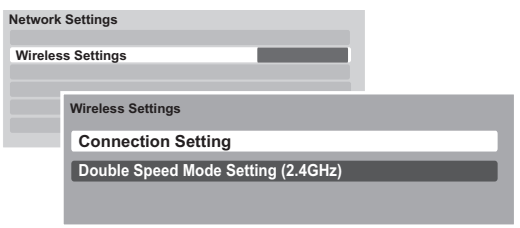


➢ LAN Connection Mode

Select connection method.

➢ Wireless Settings

This allows the Wireless router and connection settings to be set and the current connection settings and connection state to be checked when a wireless connection is used.



➢ Connection Setting

The Wireless router connection wizard will be displayed.

➢ Double Speed Mode Setting (2.4GHz)

When a 2.4 GHz wireless format is used, this setting sets the connection speed.

- If you connect using the "Double Speed Mode(40MHz)", 2 channels use the same frequency band, and there is consequently a greater risk of reception interference. This can cause the connection speed to drop or the connection to become unstable.

➢ IP Address / DNS Settings

Check the connection of the network or set the IP address and DNS.

- Press [OK] to show the respective setting.

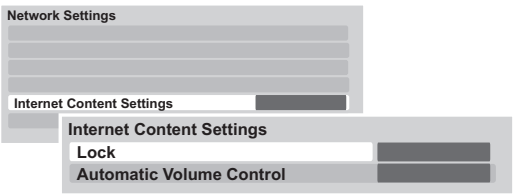
- "Connection Speed Setting" is enabled only when "Connection Speed Auto-configure" is turned "Off".

➢ Proxy Server Settings

Check and set the connection to the Proxy server.

- Press [OK] to show the respective setting.

➢ Internet Content Settings



➢ Lock

You can restrict using VIERA CAST.

- Follow the on-screen instructions.
- PIN is required to change. (⇨ 74)

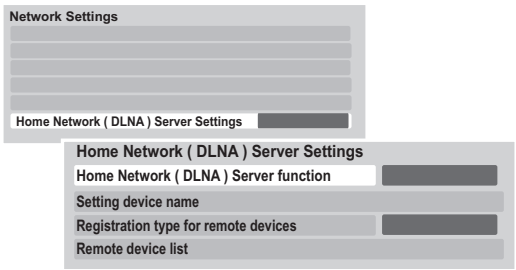
➢ Automatic Volume Control

Volume that is different depending on the contents is adjusted automatically to the standard volume while using the VIERA CAST.

- Depending on contents, this function will not work.
- Select "Off" when the audio is warped.

➢ Home Network (DLNA) Server Settings

You can set the DLNA (Server) function (⇨ 70)



➢ Home Network (DLNA) Server function

You can switch between enable/disable of the DLNA (Server) function.

- If “On” is selected, “Power Save in Standby” is fixed to “Off”. (⇨ right)

➢ Setting device name

It is also possible to change the name of this unit on the network.

- **Select from a preset list**
  Select the preset name, then press [OK].
- **Create name**
  Enter the name. (⇨ 66, Entering text)

➢ Registration type for remote devices

Automatic	All connected devices on the same network can access this unit.
Manual	Only registered devices can access this unit.

➢ Remote device list

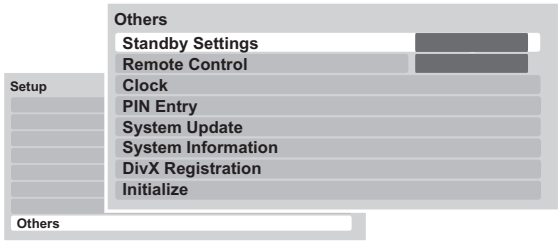
- This function cannot be enabled when “Manual” is selected in “Registration type for remote devices”. (⇨ above)

- **To register equipment manually**
  1 Select the device name or the MAC Address for the device you want to register, then press [OK].
  2 Select “Yes”, then press [OK].

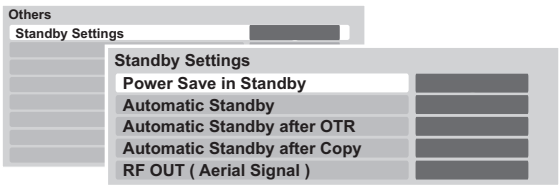
- **To deregister equipment**
  1 Select the registered equipment, then press [OK].
  2 Select “Yes”, then press [OK].

- The maximum number of equipment that can be registered is 16.

Others



■ Standby Settings



➢ Power Save in Standby

On	It will go into the “Power Save in Standby” mode.
On Timer	“Power Save in Standby” is activated when the set time comes. ● If the clock has not been set, “Power Save in Standby” is activated at all hours.
Off	It is possible to start quickly from the standby mode. (Quick Start mode)

- This function cannot be enabled when the DLNA function is enabled in “Home Network (DLNA) Server Settings”. (⇨ left)
- The setting may be changed to “Off” automatically when the setting for video communication is changed. (⇨ 67)

➢ Automatic Standby

Set the time to turn the unit to standby mode automatically.

After the unit has finished operating, the unit will be turned to standby mode once the set time has passed.

- When “REWIND LIVE TV” is set to “On”(⇨ 77), “Off” cannot be selected.

➢ Automatic Standby after OTR

If "On" is selected, this unit is turned to standby mode when it is not operated for approximately 5 minutes after completing "Automatic Stop" or "Recording Time" (⇨ 28).

➢ Automatic Standby after Copy

If "On" is selected, this unit is turned to standby mode when it is not operated for approximately 5 minutes after completing copy (⇨ 50).

➢ RF OUT (Aerial Signal)

Set whether to output the aerial signal or not from RF OUT while in standby mode (when "Power Save in Standby" is activated).

- If "On" is selected, the aerial signal is output from this unit.

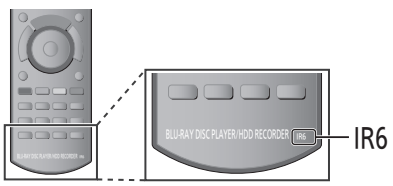
■ Remote Control

Change the remote control code on the main unit and the remote control if you place other Panasonic products close together.

- Use "BD 1", the factory set code, under normal circumstances.

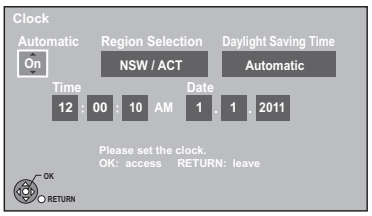
① Select the code, then press [OK].
② While pressing [OK], press and hold the number button ([1] to [6]) for more than 5 seconds.
③ Press and hold [OK] for more than 5 seconds.
④ Press [OK].

- Operation is possible only with Panasonic remote controls with "IR6" printed at the bottom when the remote control code of this unit is set to "BD 4", "BD 5" or "BD 6".



■ Clock

If the time is not set correctly, use the settings listed in the method below.



- **Automatic**

This unit usually obtains time and date information from digital broadcasts.
But, if the time is not set correctly, set it to "Off" and perform "Manual setting".

- **Region Selection**

Select the region where you live to adjust the standard time.

- The time contained in the broadcast signal is UTC (Universal time, coordinated).

- **Daylight Saving Time**

Select time offset from the standard time for Summer Time.

- If there is a gap between displayed time and actual time, set this function.

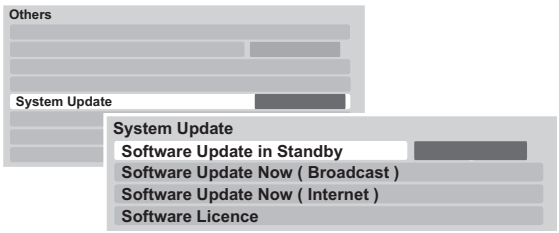
- **Manual setting**

① Select "Off" of "Automatic", then press [OK].
② Select the item you want to change.
③ Change the setting.
④ Press [OK] when you have finished the settings.

■ PIN Entry

You can set/change the PIN. (⇨ 74)

■ System Update



➢ Software Update in Standby

When you set this unit to standby mode, software (firmware) updates (⇨ 86) are downloaded automatically at the time you have specified.

➢ Software Update Now (Broadcast)

Software of this unit will be updated from broadcasts if update information is detected. (⇨ 86)

➢ Software Update Now (Internet)

Software of this unit will be updated from Internet if update information is detected. (⇨ 86)

➢ Software Licence

Information about the software licence is displayed.

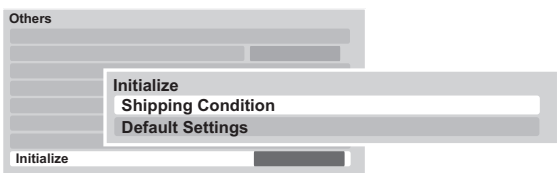
■ System Information

Display software (firmware), HDAVI Control version and Wireless Module version (When using wireless connection only) of this unit.

■ DivX Registration

You need this registration code to purchase and play DivX Video-on-Demand (VOD) content (⇨ 95).

■ Initialize



➢ Shipping Condition

All the settings except for basic settings return to the factory preset. The timer recording programmes are also cancelled.

➢ Default Settings

All the settings other than the tuning settings, clock settings, disc language settings, rating PIN, remote control code, network settings etc. return to the factory presets.

Language code list

Enter the code with the number buttons.

Abkhazian:	6566	Gujarati:	7185	Rhaeto-Romance:	8277
Afar:	6565	Hausa:	7265	Romanian:	8279
Afrikaans:	6570	Hebrew:	7387	Russian:	8285
Albanian:	8381	Hindi:	7273	Samoan:	8377
Amharic:	6577	Hungarian:	7285	Sanskrit:	8365
Arabic:	6582	Icelandic:	7383	Scots Gaelic:	7168
Armenian:	7289	Indonesian:	7378	Serbian:	8382
Assamese:	6583	Interlingua:	7365	Serbo-Croatian:	8372
Aymara:	6589	Irish:	7165	Shona:	8378
Azerbaijani:	6590	Italian:	7384	Sindhi:	8368
Bashkir:	6665	Japanese:	7465	Singhalese:	8373
Basque:	6985	Javanese:	7487	Slovak:	8375
Bengali; Bangla:	6678	Kannada:	7578	Slovenian:	8376
Bhutani:	6890	Kashmiri:	7583	Somali:	8379
Bihari:	6672	Kazakh:	7575	Spanish:	6983
Breton:	6682	Kirghiz:	7589	Sundanese:	8385
Bulgarian:	6671	Korean:	7579	Swahili:	8387
Burmese:	7789	Kurdish:	7585	Swedish:	8386
Byelorussian:	6669	Laotian:	7679	Tagalog:	8476
Cambodian:	7577	Latin:	7665	Tajik:	8471
Catalan:	6765	Latvian, Lettish:	7686	Tamil:	8465
Chinese:	9072	Lingala:	7678	Tatar:	8484
Corsican:	6779	Lithuanian:	7684	Telugu:	8469
Croatian:	7282	Macedonian:	7775	Thai:	8472
Czech:	6783	Malagasy:	7771	Tibetan:	6679
Danish:	6865	Malay:	7783	Tigrinya:	8473
Dutch:	7876	Malayalam:	7776	Tonga:	8479
English:	6978	Maltese:	7784	Turkish:	8482
Esperanto:	6979	Maori:	7773	Turkmen:	8475
Estonian:	6984	Marathi:	7782	Twi:	8487
Faroese:	7079	Moldavian:	7779	Ukrainian:	8575
Fiji:	7074	Mongolian:	7778	Urdu:	8582
Finnish:	7073	Nauru:	7865	Uzbek:	8590
French:	7082	Nepali:	7869	Vietnamese:	8673
Frisian:	7089	Norwegian:	7879	Volapük:	8679
Galician:	7176	Oriya:	7982	Welsh:	6789
Georgian:	7565	Pashto, Pushto:	8083	Wolof:	8779
German:	6869	Persian:	7065	Xhosa:	8872
Greek:	6976	Polish:	8076	Yiddish:	7473
Greenlandic:	7576	Portuguese:	8084	Yoruba:	8979
Guarani:	7178	Punjabi:	8065	Zulu:	9085
		Quechua:	8185		

Software (Firmware) Update

Software of this unit can be updated automatically by the following methods at the specified time.
(Default setting is 3 a.m. ⇨ 85, Software Update in Standby)

– From broadcasts
– From Internet※

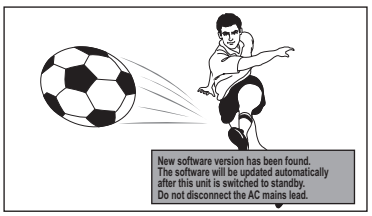
- **To update the Software (Firmware) immediately, use the following function:**

  – Software Update Now (Broadcast) (⇨ 85)
  Software of this unit will be updated from broadcasts if update information is detected.

  – Software Update Now (Internet)※ (⇨ 85)
  Software of this unit will be updated from Internet if update information is detected.

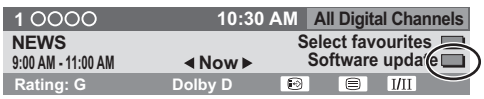
※ Network connection and setting are required. (⇨ 14, 21)

■ If a software (firmware) update is available, a notification is displayed.



- It is displayed on the channel information (⇨ 25) when the Software (Firmware) can be updated immediately.

  e.g.,



  To execute, push the “Red” button while the channel information is displayed, and follow the instructions on the screen.

- Update of the software (firmware) will start when the unit is turned to standby mode.

■ The unit’s display during the update

e.g.,

- When “FINISH” is displayed, update of the software (firmware) has completed.

You cannot operate the unit until the update is complete. Removing the AC mains lead while the update is in progress may damage the unit. Don’t remove the AC mains lead during the update.

- The time it takes to update depends on the connection.
  – From broadcast: About 2 hours
  – From Internet: About 1 hour
- The download time depends on the network or broadcast environment.
- If the timer recording is scheduled within the following time at the start of the download, the download will not be executed.
  – From broadcast: Within 4 hours
  – From Internet: Within 1 hour
- You can also download the latest software (firmware) from the following website and burn it to a CD-R to update the software (firmware).
  http://panasonic.jp/support/global/cs/
- If you do not want to perform the software (firmware) update, set the “Software Update in Standby” to “Off”. (⇨ 85)

Other Settings

Switching the aspect ratio of the screen

When black bars are shown at the top, bottom, left, and right sides of the screen, you can enlarge the image to fill the screen.

1 Press [OPTION].

2 Select “Aspect”, then press [OK].

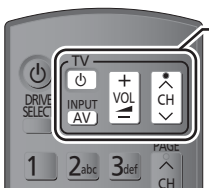
3 Select the item, then press [OK].

Normal	Normal output
Side cut	The black bars on the right and left sides of the 16:9 image disappear and the image is enlarged.
Zoom	The black bars on the top and bottom sides of the 4:3 image disappear and the image is enlarged.

- This function does not work when watching 3D programme and playing back 3D title or 3D photo.
- It may also be adjusted using the screen mode of the TV etc.
- The screen mode is switched to “Normal” in the following situations:
  – when you change the channel
  – when you start or end the playback of a title
  – when the unit is turned off or on.
- BD-V DVD-V “Side cut” does not have any effect.
- When “TV Aspect” (⇨ 80) is set to “Pan & Scan” or “Letterbox”, the “Zoom” effect is disabled.

TV operation

Once set, the TV can be operated from the TV operation area of the remote control.



1 Point the remote control at the TV. While pressing [TV ⏻], enter the code (⇨ right) with the number buttons.

2 Test by turning on the TV and changing channels.

- Repeat the procedure until you find the code that allows correct operation.
- If the brand of your TV is not listed or the code number is invalid for the TV, this remote control is not compatible with your TV.

- If your TV brand has more than one code listed, select the one that allows correct operation.

Manufacturer and Code No.

Brand	Code	Brand	Code
Panasonic	01/02/03/04	NEC	36
AIWA	35	NOBLEX	33
AKAI	27/30	NOKIA	25/26/27/60/61
BEKO	05/71/72/73/74	NORDMENDE	10
BENQ	58/59	OLEVIA	45
BRANDT	10/15	ONWA	30/39/70
BUSH	05	ORION	05
CENTREX	66	PEONY	49/69
CURTIS	05	PHILCO	41/48/64
DAEWOO	64/65	PHILIPS	05/06/46
DESMET	05	PHONOLA	05
DUAL	05	PIONEER	37/38
ELEMIS	05	PROVIEW	52
FERGUSON	10/34	PYE	05
FINLUX	61	RADIOLA	05
FISHER	21	SABA	10
FUJITSU	53	SALORA	26
FUNAI	63/67	SAMSUNG	32/42/43/65/68
GOLDSTAR	05/50/51	SANSUI	05
GOODMANS	05	SANYO	21/54/55/56
GRADIENTE	36	SCHNEIDER	05/29/30
GRUNDIG	09	SEG	05/69/75/76/77/78
HITACHI	05/22/23/40/41	SELECO	05/25
IRRADIO	30	SHARP	18
ITT	25	SIEMENS	09
JVC	17/30/39/70	SINUDYNE	05
KDS	52	SONY	08
KOLIN	45	TCL	31/33/66/67/69
KONKA	62	TELEFUNKEN	10/11/12/13/14
LG	05/50/51	TEVION	52
LOEWE	07/46	THOMSON	10/15/44
MAG	52	TOSHIBA	16/57
METZ	05/28/79	WHITE WESTINGHOUSE	05
MITSUBISHI	05/19/20/47		
MIVAR	24	YAMAHA	18/41

Messages on the unit's display

The following messages or service numbers appear on the unit's display when something unusual is detected during startup and use.

BD □

("□" stands for a number.)

- The remote control and main unit are using different codes. Change the code on the remote control.

Unit's display

Press and hold [OK] and the indicated number button at the same time for more than 5 seconds. (⇨ 84)

GUIDE

- TV Guide data is being downloaded. (⇨ 26)

FINISH

- The software (firmware) update is complete. (⇨ 86)

HARD ERR

- If there is no change after turning the unit on and off, consult the dealer where the unit was purchased.

NoREAD

- The disc is dirty or badly scratched. The unit cannot play. (⇨ 97)
- This message may appear when the lens cleaner has finished cleaning.
  Press [▲ OPEN/CLOSE] on the main unit to eject the disc. (⇨ 18)

PLEASE WAIT

- Displayed when the unit is started and turned off.
- There was a power failure or the AC plug was disconnected while the unit was on. The unit is carrying out its recovery process. This process restores the unit to normal operation. The unit is not broken. Wait until the message disappears.

PROG FULL

- There are already 32 timer programmes. Delete unnecessary timer programmes. (⇨ 35)

REMOVE

- The USB device is drawing too much power. Remove the USB device.

START

- Update of the software (firmware) is started.
  You cannot operate the unit until the update is complete. (⇨ 86)

SW-DL

- Software (firmware) is downloading.
  Download will stop when the unit is turned on, or the timer recording starts. (⇨ 86)

UNSUPPORT

- You have inserted a disc the unit cannot play. (⇨ 6)
  You tried to operate with a non-compatible USB memory.

UPD □/□

("□" stands for a number.)

- The software (firmware) is being updated.
  You cannot operate the unit until the update is complete. (⇨ 86)

U59

- The unit is hot.
  The unit switches to standby for safety reasons. Wait for about 30 minutes until the message disappears.
  Select a position with good ventilation when installing the unit. Do not block the cooling fan on the rear of the unit.

U61

- (When a disc is not inserted) Displays when a malfunction has occurred. This is displayed when the unit is in the recovery process to return to normal operation. Once the display clears you can use the unit again.
  If it remains displayed, consult the dealer where the unit was purchased.

U76

- HDMI cannot be output because it is connected to a model that does not support copyright protection.

U77

- Due to the current disc not having authorised copyright information, video output is not performed.

U88

- (When a disc is inserted) Displays when there was something unusual detected with the disc while playback or copy. This is displayed when the unit is in the recovery process to return to normal operation. Once the display clears you can use the unit again.
  If it remains displayed, consult the dealer where the unit was purchased.

U99

- The unit fails to operate properly. Press [⏻/I] on the main unit to switch the unit to standby mode. Now press [⏻/I] on the main unit again to turn the unit on.

H□□ or F□□

("□" stands for a number.)

- There is something unusual. (The service number displayed after H and F depends on the unit's condition.)
- Check the unit using the troubleshooting guide. (⇨ 90–94) If the service number does not disappear, do the following.

1. Disconnect the plug from the household mains socket, wait a few seconds, then reconnect it.
2. Press [⏻/I] to turn the power on. (The unit may be fixed.)

If the service number does not disappear despite after doing the above, request service from the dealer. Inform the dealer of the service number when requesting service.

X HOLD

- The HOLD function is activated.
  Press and hold [OK] and [RETURN ⮌] at the same time until "X HOLD" disappears. (⇨ 18)

Troubleshooting guide

Before requesting service, make the following checks. If the problem still persists, consult your dealer for instructions.
Updating to the latest software (firmware) may solve the problem. (⇨ 86)

The following do not indicate a problem with this unit:
● Regular disc rotating sounds or louder rotating sounds when high speed copying.
● Poor reception due to atmospheric conditions.
● Image disturbance during search.
● Image disturbance when replacing 3D discs.
● Interruptions in reception due to periodic terrestrial broadcasting breaks.
● When the unit is turned on or off, there may be an unexpected sound. This does not indicate a problem with this unit.

■ The unit doesn't work.

One of the unit's safety devices may have been activated.
Reset the unit as follows:

① Press [⏻/I] on the main unit to switch the unit to standby.
- If the unit doesn't switch to standby, press [⏻/I] on the main unit for about 3 seconds. The unit is forcibly switched to standby.
  Alternatively, disconnect the AC mains lead, wait one minute, then reconnect it.

② Press [⏻/I] on the main unit to switch it on. If the unit still cannot be operated, consult the dealer.

■ Cannot eject a disc.

The unit may have a problem. While the unit is off, press and hold [■] (STOP) and [CH ∧] on the main unit at the same time for about 5 seconds.

Power

The unit is turned off automatically.

➢ If you connected this unit to a "HDAVI Control" compatible TV with an HDMI cable, this unit will be automatically set to standby mode when the TV is set to standby mode.

Displays

The display is dim.

➢ Change "Unit's Display". (⇨ 80)

"0:00" is flashing on the unit's display.

➢ Set the clock. (⇨ 84)

The clock does not display on the unit when switched to standby.

➢ The clock does not display when "Power Save in Standby" is activated. Ensure "Power Save in Standby" is set to "Off". (⇨ 83)

TV screen and video

Screen size is wrong.

➢ Check the "TV Aspect" or "Aspect for 4:3 Video". (⇨ 80)
➢ Adjust the aspect ratio setting on TV. Refer to your TV's operating instructions.
➢ If the 16:9 aspect ratio image is output to a 4:3 TV and the image will be stretched vertically, set "TV Aspect" to 4:3. (⇨ 80)
➢ Check "Aspect for Recording" before recording or file conversion. (⇨ 77)
➢ If you connect to 4:3 TV, set "HDMI Video Format" to "576p/480p". (⇨ 81)

Pictures do not appear with the HD quality although HD setting was made.

➢ The pictures are output with 576p/480p depending on the programme.

The screen changes automatically.

➢ If there is no operation for 5 minutes or more, the displayed screen switches to the other states automatically (only when the "Screen Saver" is set to "On"). (⇨ 80)

There is a lot of image lag when playing video.

- Set “HD optimizer” in the Picture menu to “Off”. (⇨ 73)
- Set “Audio Delay”. (⇨ 79)

The images from this unit do not appear on the TV.
The picture is distorted during play, or video will not play correctly.

- Check the connection and the TV’s input settings.
- The unit’s “TV System” setting differs from the TV system used by the disc now playing. While stopped, keep pressing [■] (STOP) and [▲ OPEN/CLOSE] on the main unit for 5 or more seconds. The system switches from PAL to NTSC or vice versa. (⇨ 80)
- Picture may not be seen when more than 4 devices are connected with HDMI cables.
  Reduce the number of connected devices.
- The picture may be distorted or a black screen may appear between scenes recorded with different aspect ratios.
- DVD-R DL and +R DL discs have two writable layers on one side. Video and audio may momentarily cut out when the unit is switching layers.
- Set “Deep Colour Output” (⇨ 81) or “Contents Type Flag” (⇨ 81) to “Off”.

3D video is not output correctly.

- Check the settings on this unit and the TV. (⇨ 43)
- When a non-3D compatible amplifier/receiver is connected between this unit and a TV, 3D video is not output. (⇨ 16)
- When the amplifier/receiver which is connected between this unit and a TV is off, 3D video is not output. (⇨ 16)
- Discs that have recorded titles with Side by side (2 screen structure) and that can be enjoyed in 3D are played back in accordance with the settings of the TV.
- When “HDMI Audio Output” is set to “Off”, 3D video may not be output correctly. (⇨ 81)

TV reception is not displayed.

- Broadcast signals are output from this unit’s RF OUT terminal. Select “On” in “RF OUT (Aerial Signal)”. (⇨ 84)

Sound

No sound.
Distorted sound.

- Check the connections or amplifier’s settings. (⇨ 12, 16)
- Press [AUDIO] to select the audio. (⇨ 25, 42)
- To output audio from a device connected with an HDMI cable, set “HDMI Audio Output” to “On”. (⇨ 81)

Cannot switch audio.

- You cannot switch the audio if “Digital Audio Output” is set to “Bitstream” (⇨ 79)

Operation

The remote control doesn’t work.

- The remote control and main unit are using different codes. Change the code on the remote control.

Unit’s display

Press and hold [OK] and the indicated number button at the same time for more than 5 seconds. (⇨ 84)

- Software (firmware) is updating when “UPD □/□” is displaying on the unit’s display. Wait until the update is completed. (⇨ 86)
- The HOLD function is activated. (⇨ 18)

The unit is on but cannot be operated.

- Drive has not been selected properly.

Cannot tune channels.

- Check the connections.

“Download from TV” function does not work.

- You must connect to a VIERA Link (HDAVI Control 3 or later) compatible TV with a HDMI cable to download channel presets. (⇨ 12)

Startup is slow.

- Startup takes time in the following situations:
  - A disc is inserted.
  - The clock is not set.
  - Immediately after a power failure or the AC mains lead is connected.
  - When the unit is connected with an HDMI cable.
  - When the BD-J (⇨ 107) application is executing.
  - When the “Power Save in Standby” is activated. (⇨ 83)

Recording, timer recording and copying

Cannot record.
Cannot copy.

- Some broadcasts are copyright protected.
- You cannot record/copy to the disc.

Timer recording does not work properly.

- Refer to “Notes on timer recording”. (⇨ 34)

A part or whole of a recorded title has been lost.

- If there is a power failure or the AC mains lead is disconnected from the household mains socket while recording or editing, the title may be lost or the HDD may become unusable.
  We cannot offer any guarantee regarding lost programmes.

Play

Cannot playback.

- The disc is dirty, scratched or marked. (⇨ 97)
- You tried to play a +RW that needs to have a Top Menu on the equipment used for recording.
- BD-R BD-RE
  Set “Play Video (AVCHD) on BD-RE / BD-R” to “On” and the playback may be possible (⇨ 77).
- The disc that is recorded by using other equipment and not finalised may not be able to playback.

Audio and video momentarily pause.

- -R DL +R DL When playing a title recorded on both layers, the unit automatically switches between layers and plays the title in the same way as a normal programme. However, video and audio may momentarily cut out when the unit is switching layers.

BD-Video or DVD-Video is not played.

- You have set a rating level. (⇨ 77, BD-Video Parental Control, DVD-Video Parental Control)
- Ensure the disc is for the correct BD-Video region code or DVD-Video region number, and is not defective.

You have forgotten your rating PIN.
You want to cancel the rating level.

- The rating level returns to the factory preset. While the disc tray is open, press [DRIVE SELECT] to select the BD drive, then press and hold [● REC] and [▶/×1.3] on the main unit at the same time for 5 or more seconds (“INIT” will appear on the unit’s display).

Image for the Quick View is not smooth.

- Image may not be played back smoothly in case of DR, HG, HX, HE, HL, HM mode titles, AVCHD format titles or BD-Video.
- This function does not work when recording is in XP or FR mode.

The resume play function does not work.

- Memorized positions are cancelled when
  – open the disc tray.
  – CD SD USB turn off the unit.
  (HDD will not be cancelled)
- This function does not work for some BD-Video disc that contains BD-J.

Edit

Cannot edit.

- You may not be able to edit on the HDD if there is no available space.
  Delete any unwanted titles to create empty space. (⇨ 44)

Photo

The contents of the SD card cannot be read.

- Remove the card from the slot and then insert again. If this does not solve the problem, turn off and turn on the unit again.

Copying, deleting and setting protection takes a long time.

- When there are a lot of folders and files, it may sometimes take a few hours.

Photos (JPEG/MPO) do not playback normally.

- The images that were edited on the PC, such as Progressive JPEG, etc., may not play back. (⇨ 101)

USB

This unit does not recognize the USB connection correctly.

- If USB device is connected to this unit while playing a disc or in a video communication the connection will not be recognized. Press [EXIT] and reconnect USB device.
- If inserted during playback the USB device may not be recognized by this unit.
  Disconnect and reconnect the USB cable. If it still does not recognize the connection, turn this unit off and on again.

TV Guide

The TV Guide System does not receive any data.

- If signal quality is bad (ghost images or limited reception), the TV Guide system may not be able to receive any data.

The empty field is displayed for some or all channels.

- Some channels are not supported by the TV Guide system.

The TV Guide information is not displayed properly.

- Set the clock correctly. (⇨ 84)
- There was a programme change, or TV Guide information from a broadcast station was possibly not correctly transmitted.
  Check the current programme, e.g. on the Web site for the TV Guide system provider or station provider.

The TV Guide data transfer was interrupted.

- The TV Guide system shows the data that was received up to the interruption.
- The programme information may be incomplete.

Broadcast

Picture regularly breaks up on some channels.

- Adjust the aerial reception with “Manual Tuning”. (⇨ 75)

Picture very infrequently breaks up on some or all channels.

- Electrical atmospheric interference caused by local or distant lightning storms or heavy rain with wind in “leafy” locations may cause pictures to break up and audio to mute or distort momentarily.

After the Auto Setup, there are channels that cannot be seen.

- The Auto Setup was started and interrupted.
  Do Auto Setup again. (⇨ 75)

VIERA Link

VIERA Link doesn’t work.

- Some functions may not work depending on the version of “HDAVI Control” of the connected equipment. This unit supports “HDAVI Control 5” functions.
- If the connection for the equipment connected with HDMI was changed, or if there was a power failure or the plug was removed from the household mains socket, “HDAVI Control” may not work.
  In this case, change TV (VIERA) setting for “HDAVI Control” again.

Network

You cannot access this unit from DLNA compatible equipment on the network.

- Check the network connection and the network settings. (⇨ 14, 21, 70, 71, 82)
- It may not be possible to connect depending on the types of the equipment or the status of the equipment.

When using Wireless LAN connection, video from the DLNA Certified media server is not played back or video frames are dropped during playback.

- Higher transfer rate router such as 802.11n (2.4 GHz or 5 GHz) Wireless router may solve the problem. If you use 802.11n (2.4 GHz or 5 GHz) Wireless router, it is necessary to set the encryption type to “AES”. Simultaneous use with a microwave, cordless telephone etc. at 2.4 GHz may result in connection interruptions or other problems.
- On the “Wireless Settings” screen (⇨ 82), the continuous lighting of at least 4 “Reception” indicators is the target for a stable connection. If 3 or fewer indicators are lit or the connection is being interrupted, change the position or angle of your Wireless router and see if the connection state improves. If there is no improvement, connect to a wired network and perform the “Network Easy Setting” (⇨ 21) again.

To reset this unit

To return all the settings to the factory preset

- Perform “Shipping Condition” or “Default Settings”. (⇨ 85)

To reset the rating level settings

- While the disc tray is open, press [DRIVE SELECT] to select the BD drive, then press and hold [● REC] and [►/×1.3] on the main unit at the same time for 5 or more seconds.

Regarding DivX

ABOUT DIVX VIDEO:
DivX® is a digital video format created by DivX, Inc. This is an official DivX Certified® device that plays DivX video. Visit divx.com for more information and software tools to convert your files into DivX video.

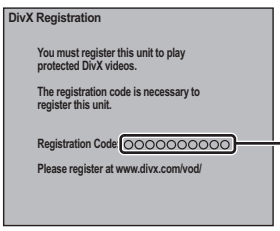
ABOUT DIVX VIDEO-ON-DEMAND:
This DivX Certified® device must be registered in order to play purchased DivX Video-on-Demand (VOD) movies. To obtain your registration code, locate the DivX VOD section in your device setup menu.
Go to vod.divx.com for more information on how to complete your registration.

BD-R -R -R DL CD USB

- Video images of the copyright-protected DivX VOD contents stored on USB device can be output only through the HDMI output terminal.

■ Display the unit's registration code.

1 Press [FUNCTION MENU].
2 Select "Setup" in "Others", then press [OK].
3 Select "DivX Registration" in "Others", then press [OK].



DivX Registration screen before registration

10 alphanumeric characters

- After playing DivX VOD content for the first time, the registration code is not displayed.
- If you purchase DivX VOD content using a registration code different from this unit's code, you will not be able to play this content.

To cancel the unit's registration
Select "Yes" in "DivX Registration".
Use the deregistration code to cancel the registration in www.divx.com.

Regarding DivX VOD content that can only be played a set number of times
Some DivX VOD contents can only be played a set number of times. When you play this content, the number of times already played and initially playable number of times is displayed.

- The remaining number of plays decreases each time a programme is played. However, when playing from the point where play was previously stopped, the remaining number of plays does not decrease due to the resume play function.

Unit care

■ Indemnity concerning recorded content
Panasonic does not accept any responsibility for damages directly or indirectly due to any type of problems that result in loss of recording or edited content (data), and does not guarantee any content if recording or editing does not work properly. Likewise, the above also applies in a case where any type of repair is made to the unit (including any other non-HDD related component).

Cleaning

■ This unit

- Wipe with a soft, dry cloth.
- Never use alcohol, paint thinner or benzine to clean this unit.
- Before using chemically treated cloth, carefully read the instructions that came with the cloth.

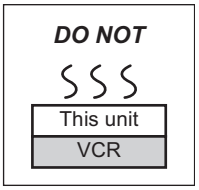
■ This unit's lens

Use the **Lens cleaner** (not supplied) to clean the unit's lens.

Lens cleaner: RP-CL720AE
- This lens cleaner may not be for sale depending on the region.

Setup precautions

- **Place the unit on a surface that is flat and not subject to vibration or impact.**
- **Do not place on anything that generates heat like a VCR, etc.**
- **Place in an area where condensation does not occur. Conditions where condensation may occur**
  - When there is an extreme change in temperature (moving from a very hot location to a very cold location, or vice versa, or when subjected to an air conditioner or when cooled air directly impacts the unit).
  - When there is high humidity or a lot of steam in the room.
  - During the rainy season.



In the above situation, **without turning the unit on**, let the unit adjust to the room temperature and wait 2–3 hours until condensation is gone.

■ Cigarette smoke etc. causes malfunction or breakdown

The unit may breakdown if cigarette smoke or bug spray/vapour, etc. gets inside the unit.

When moving the unit

Before moving the unit, ensure the disc tray is empty.

① Turn the unit off. (Wait until "BYE" disappears from the display.)
② Remove the AC mains lead from the household mains socket.
③ Move only after the unit has come to a complete stop (approx. 3 minutes) in order to avoid subjecting to vibration and shock. (Even after turning the unit off, the HDD continues operating for a short time.)

HDD (Hard disk drive) handling care

The HDD is a high precision recording instrument and because of its long recording capability and high speed operation it is a very special device that is easily susceptible to damage.

■ The HDD is a device that is not built to withstand vibration/shock or dust

Depending on the setup environment and handling of the HDD some content may become damaged and play and recording may no longer be possible. Especially during operation, do not subject the unit to any vibration, shock, or remove the AC mains lead from the household mains socket. In the event of a power failure during recording or play, the content may be damaged.

■ HDD is a very special device that is easily susceptible to damage

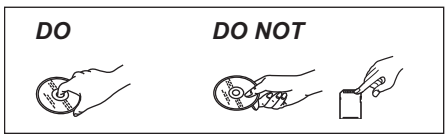
This unit cannot save (backup) the HDD titles to media. You have to be very careful when handling the unit and editing the title.

Media handling

This unit cannot copy the titles in the HDD to the media. Be careful when deleting the original title after copying to the HDD.

■ How to hold a disc or SD card

Do not touch the recorded surface or the terminal surface.

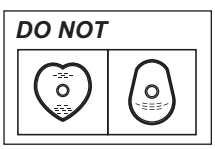


■ If there is dirt or condensation on the disc

Wipe with a damp cloth and then wipe dry.

■ Handling precautions

- Do not attach labels or stickers to discs.
- Do not use record cleaning sprays, benzine, thinner, static electricity prevention liquids or any other solvent.
- Do not use ballpoint pens or other hard writing implements, when writing on the label side of the disc.
- Do not expose the terminals of the SD card to water, garbage or other strange things.
- Do not drop stack, or impact discs. Do not place objects on them.
- Do not use the following discs:
  - Discs with exposed adhesive from removed stickers or labels (rental discs, etc.).
  - Discs that are badly warped or cracked.
  - Irregularly shaped discs, such as heart shapes.



- Do not place in the following areas:
  - In direct sunlight.
  - In very dusty or humid areas.
  - Near a heater.
  - Locations susceptible to significant difference in temperature (condensation can occur).
  - Where static electricity or electromagnetic waves occur.

Operations that can be performed simultaneously

Operations that can be performed while recording or copying a title

(◯: Possible, –: Impossible)

	Playback of HDD	Playback of discs	Playback of SD Card	Playback of photo	Playback of music recorded on HDD
While recording programme	◯※1	◯※1, 2	◯※1	–	◯
While copying in normal speed mode	–	–	–	–	–
While copying in high speed mode	◯	–	–	–	–

※1 Titles recorded in 1080/60p cannot playback.

※2 DivX and MKV video cannot playback.

Starting the timer recording while executing other operation

(◯: Possible, –: Impossible)

Executing operation	Starting of the timer recording
Recording the title※	◯
Playing the title	◯
Editing the title	◯
Copying a title in high speed mode	◯
Copying a title in normal speed mode	–
Converting a title in “File Conversion” (Only when “Now” is selected)	–

Executing operation	Starting of the timer recording
Copying HD Video (AVCHD format)	–
Executing PAUSE LIVE TV/REWIND LIVE TV※	◯
Editing photo or music	–
Copying photos	–
Copying music	–
Formatting	–

※ The operation will terminate when simultaneous recording is being done and timer recording starts.

Specifications

Specifications are subject to change without notice.

■ General

Dimensions (W×H×D):
430 mm×59 mm×238 mm
(excluding the projecting parts)
430 mm×59 mm×249 mm
(including the projecting parts)

Mass: Approx. 3.0 kg
Power supply: AC 220 to 240 V, 50 Hz
Power consumption: Approx. 34 W
"Power Save in Standby" is activated and "RF OUT (Aerial Signal)" is set to "Off"
Approx. 0.2 W
"Power Save in Standby" is not activated
Approx. 5.0 W

Operating temperature: 5 °C to 40 °C
Operating humidity range: 10 % to 80 % RH (no condensation)

■ TV system

Tuner System: DVB-T
Channel Coverage: Australia
VHF: 6~12
UHF: 27~69
RF converter output: Not provided

■ Video

Video system: PAL (colour signal, 625 lines, 50 fields)/ NTSC (colour signal, 525 lines, 60 fields)
Recording system: MPEG2 (Hybrid VBR)
MPEG-4 AVC/H.264
Video out (PAL/NTSC):
1 Video out (pin jack) 1 Vp-p 75 Ω, termination

■ Audio

Recording system:
Dolby Digital (2ch) (XP, SP, LP, EP mode)
Dolby Digital (Max 5.1ch)
(DR, HG, HX, HE, HL, HM mode)
HE-AAC (2ch) (DR mode)
MPEG (2ch) (DR mode)
Audio out: 1 Audio output (pin jack)
Output level: Standard: 0.5 Vrms,
Full scale: 2.0 Vrms at 1 kHz
Output impedance: Less than 1 kΩ
Digital audio out:
Optical terminal (PCM, Dolby Digital, DTS, MPEG)
HDMI terminal
(PCM, Dolby Digital, DTS, MPEG, Dolby Digital Plus, Dolby TrueHD, DTS-HD Master Audio, DTS-HD High Resolution Audio)

■ HDMI Output

19 pin type A: 1 pc
- This unit supports "HDAVI Control 5" function.

■ Other terminals

USB Port: Type A: 2 pcs
SD Card Slot: 1 pc
LAN (Ethernet) Port: 10BASE-T/100BASE-TX

■ Internal HDD capacity

320 GB

■ WLAN

Antenna: Tx 1, Rx 2
Standard compliance: IEEE802.11n/ IEEE802.11a/ IEEE802.11g/ IEEE802.11b
Transmission system: MISO-OFDM system/ OFDM system/ DSSS system
Transfer rate (standard)※1:
IEEE802.11n: Tx Max 150 Mbps/ Rx Max 300 Mbps
IEEE802.11g / IEEE802.11a: Max 54 Mbps
IEEE802.11b: Max11 Mbps
Access mode: Infrastructure mode
Security※2: WPA2-PSK (TKIP/AES)/ WPA-PSK (TKIP/AES)/ WEP (64 bit/128 bit)

※1 Transfer rates are theoretical values; however, actual communication rate will vary according to communication environment or connected equipment.
※2 This unit supports WPA and WPA2 encryption.

Specifications

■ Optical pick-up

System with 2 lens
(405 nm wavelength for BDs,
655 nm wavelength for DVDs,
790 nm wavelength for CDs)

■ LASER specification

Class 1 LASER Product

Wave length:

405 nm (BDs)
655 nm (DVDs)
790 nm (CDs)

Laser power:

No hazardous radiation is emitted with the safety protection

■ Region code

DVD:	#4
BD:	Region B

■ Playable discs

BD-Video (Blu-ray 3D, BD-Live)
BD-ROM Version 2.4

BD-RE:	Ver. 2.1, JPEG, MPO
BD-RE DL:	Ver. 2.1, JPEG, MPO
BD-R:	Ver. 1.3, LTH type Ver 1.3, DivX※4, MKV※4
BD-R DL:	Ver 1.3, DivX※4, MKV※4
DVD-R:	DVD-Video format※1, DVD-Video Recording format※1, AVCHD format※1, JPEG※2, MPO※2, MP3※2, DivX※2, 3, MKV※2, 3
DVD-R DL:	DVD-Video format※1, DVD-Video Recording format※1, AVCHD format※1, JPEG※2, MPO※2, MP3※2, DivX※2, 3, MKV※2, 3
DVD-RW:	DVD-Video format※1, DVD Video Recording format※1, AVCHD format※1
+R:	Video※1, AVCHD format※1
+R DL:	Video※1, AVCHD format※1
+RW:	Video※1, AVCHD format※1
DVD-Video:	DVD-Video format
CD-Audio:	CD-DA
CD-R/CD-RW:	CD-DA, JPEG※2, MPO※2, MP3※2, DivX※2, MKV※2

※1 Finalising is necessary.
※2 ISO9660 level 1 or 2 (except for extended formats), Joliet
This unit is compatible with multi-session.
This unit is not compatible with packet writing.
※3 UDF1.02 without ISO9660, UDF1.5 with ISO9660
※4 UDF2.5

■ SD Card

Compatible media:	SD Memory Card※1
Format:	FAT12, FAT16, FAT32※2, exFAT※3
Data that can be played:	JPEG, MPO, AVCHD format, MPEG-2

※1 Includes SDHC, SDXC card.
Includes miniSD™ cards (need a miniSD™ adaptor).
Includes microSD™/microSDHC™/microSDXC™ cards (need a microSD™ adaptor).
※2 Not support long file name
※3 SDXC only

■ USB device

USB standard:	USB 2.0 High Speed
Format:	FAT12, FAT16, FAT32
Data that can be played:	MP3, JPEG, MPO, DivX, MKV

Audio information

The audio output differs depending on which terminals are connected to the amplifier/receiver, and the setting on this unit. (⇨ 79, Digital Audio Output)

- The number of channels listed is the maximum possible number of output channels when connected to amplifier/receiver compatible with the respective audio format.

Terminal	"Digital Audio Output"	
	"Bitstream"	"PCM"
HDMI AV OUT	Output using original audio※1	BD-Video: 7.1ch PCM※1, 2 DVD-Video: 5.1ch PCM
DIGITAL AUDIO OUT	Dolby Digital/ DTS Digital Surround	Down-mixed 2ch PCM

※1 When "BD-Video Secondary Audio" is set to "On", the audio will be output as Dolby Digital, DTS Digital Surround or 5.1ch PCM.

※2 The audio output is amplified from 5.1ch or 6.1ch to 7.1ch depending on the DTS, Inc. specifications.

About JPEG/MPO/MP3/DivX/ MKV/MPEG2/AVCHD files

■ JPEG/MPO

Playable media: HDD, BD-RE (SL/DL), DVD-R, DVD-R DL, CD-R, CD-RW, SD Card, USB device

Compatible pixels: Between 34×34 and 8192×8192 pixels (Sub sampling is 4:2:2 or 4:2:0)

Files: JPEG conforming DCF (Design rule for Camera File system)
MPO conforming MPF (Multi Picture Format)

Maximum number of folders and files:

Media	Maximum folders	Maximum files
HDD	500	20000
BD-RE	500	10000
DVD-R	500	10000
CD-R, CD-RW	500	10000
SD Card	500	10000
USB device	500	10000

- JPEG files must have the extension ".jpg" or ".JPG".
- MPO files must have the extension ".mpo" or ".MPO".
- This unit is not compatible with MOTION JPEG or PROGRESSIVE JPEG.

■ MP3

Playable media: HDD, DVD-R, DVD-R DL, CD-R, CD-RW, USB device

Compression rate: 32 kbps to 320 kbps

Sampling rate: 16 kHz, 22.05 kHz, 24 kHz, 32 kHz, 44.1 kHz, 48 kHz

Maximum number of folders and files:

Media	Maximum folders	Maximum files
HDD	–	40000
DVD-R	300	3000
CD-R, CD-RW	300	3000
USB device	300	3000

- MP3 files must have the extension ".mp3" or ".MP3".

■ **DivX**

Playable media: BD-R (SL/DL), DVD-R, DVD-R DL, CD-R, CD-RW, USB device

Official DivX Certified® product
DivX Certified to play DivX video up to HD 1080p, including premium content.
GMC (Global Motion Compensation) is not supported.

Maximum number of folders: 300 folders (including the root folder)
Maximum number of files: 200 files

● **Support version**

Extension
Files must have the extension ".DIVX", ".divx", ".AVI" or ".avi".

Picture resolution
Up to 1920×1080 pixels

Video
- Number of stream: Up to 1
- Codec: DIV3, DIV4, DIVX, DV50, DIV6
- FPS (Frame Per Second): Up to 60 fps

Audio
- Number of stream: Up to 8
- Format: MP3, MPEG, Dolby Digital
- Multi channel: Dolby Digital is possible. MPEG multi is 2 ch conversion.

● DVD-R and DVD-R DL must conform to UDF 1.02 without ISO9660 and UDF 1.5 with ISO9660.

■ **MKV**

Playable media: BD-R (SL/DL), DVD-R, DVD-R DL, CD-R, CD-RW, USB device

MPEG-4 AVC (H.264) profile is up to High Profile, Level 4.
AAC-LC, MP3, Dolby Digital audio, DTS and PCM can be decoded.

Maximum number of folders: 300 folders (including the root folder)
Maximum number of files: 200 files

● MKV files must have the extension ".MKV" or ".mkv".

■ **SD-Video (Standard Definition)**

Playable media: SD Card※1, USB device※2
Codec: MPEG2
File Format: SD-Video format※3 used on Standard Definition Camera (Panasonic and some other's)

※1 Video Recording conversion and transfer is possible from SD card to HDD.
After Video Recording conversion and transfer to HDD is completed, the playback becomes possible.

※2 Video Recording conversion and transfer is possible from USB device to HDD.
After Video Recording conversion and transfer to HDD is completed, the playback becomes possible.

※3 SD-Video Entertainment Video Profile

■ **HD-Video (High Definition)**

Playable media: SD Card, USB device※
Codec: MPEG-4 AVC/H.264
File Format: AVCHD format conforming

※ Video Recording conversion and transfer is possible from USB device to HDD.
After Video Recording conversion and transfer to HDD is completed, the playback becomes possible.

Recording modes and approximate recording times

Depending on the content being recorded, the recording time may become shorter than indicated.

■ DR mode

Recording Mode	HDD (320 GB)
DR (HD quality)	42 hours
DR (SD quality)	80 hours

- **Recording time of DR mode may vary depending on bit rate of broadcasting:**
  - High Definition (HD) quality: estimated bit rate is 15 Mbps
  - Standard Definition (SD) quality: estimated bit rate is 8 Mbps

- **Regarding recording time remaining:**
  Remaining time in the DR mode is calculated with a bit rate of approx. 15 Mbps. But the bit rate differs depending on the broadcast, so the displayed remaining time might be different from the actual remaining time.

■ Other recording modes

HDD (320 GB)									
HG	HX	HE	HL	HM	XP	SP	LP	EP (6 hours)※	EP (8 hours)
48 hours	73 hours	110 hours	147 hours	214 hours	66 hours	134 hours	269 hours	404 hours	538 hours

※ When “Recording time in EP mode” is set to “6 hours” (⇨ 77)

- **Regarding recording time remaining:**
  This unit records using a VBR (Variable bit rate) data compression system to vary recorded data segments to match video data segments which may cause differences in the displayed amount of time and space remaining for recording.

Maximum number of titles that can be recorded

HDD	999 titles (When continuously recording for long durations, titles are automatically divided every 8 hours.)

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http://www.am-linux.jp/dl/FCRCP11

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At least three (3) years from delivery of products, Panasonic will give to any third party who contacts us at the contact information provided below, for a charge no more than our cost of physically performing source code distribution, a complete machine-readable copy of the corresponding source code covered under GPL v2/LGPL v2.1.

Contact Information
cdrequest@am-linux.jp

Source code is also freely available to you and any other member of the public via our website below.
http://www.am-linux.jp/dl/FCRCP11

For the software categorized as (5) includes as follows.

1. This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (http://www.openssl.org/)
2. This product includes software developed by the University of California, Berkeley and its contributors.
3. FreeType code.
4. The Independent JPEG Group's JPEG software.

MPEG Layer-3 audio coding technology licensed from Fraunhofer IIS and Thomson.

This product is licensed under the AVC patent portfolio license and VC-1 patent portfolio license for the personal and non-commercial use of a consumer to (i) encode video in compliance with the AVC Standard and VC-1 Standard ("AVC/VC-1 Video") and/or (ii) decode AVC/VC-1 Video that was encoded by a consumer engaged in a personal and non-commercial activity and/or was obtained from a video provider licensed to provide AVC/VC-1 Video. No license is granted or shall be implied for any other use. Additional information may be obtained from MPEG LA, LLC.
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Limited Warranty

Panasonic Warranty

1. The product is warranted for 12 months from the date of purchase. Subject to the conditions of this warranty Panasonic or its Authorised Service Centre will perform necessary service on the product without charge for parts or labour, if in the opinion of Panasonic, the product is found to be faulty within the warranty period.
2. This warranty only applies to Panasonic products purchased in Australia and sold by Panasonic Australia or its Authorised Distributors or Dealers and only where the products are used and serviced within Australia or it's territories. Warranty cover only applies to service carried out by a Panasonic Authorised Service Centre and only if valid proof of purchase is presented when warranty service is requested.
3. This warranty only applies if the product has been installed and used in accordance with the manufacturer's recommendations (as noted in the operating instructions) under normal use and reasonable care (in the opinion of Panasonic). The warranty covers normal domestic use only and does not cover damage, malfunction or failure resulting from use of incorrect voltages, incorrect installation, accident, misuse, neglect, build-up of dirt or dust, abuse, maladjustment of customer controls, mains supply problems, thunderstorm activity, infestation by insects or vermin, tampering or repair by unauthorised persons (including unauthorised alterations), introduction of sand, humidity or liquids, commercial use such as hotel, office, restaurant, or other business or rental use of the product, exposure to abnormally corrosive conditions or any foreign object or matter having entered the product.
4. This warranty does not cover the following items unless the fault or defect existed at the time of purchase:
   (a) Cabinet Part(s)
   (b) Video or Audio Tapes
   (c) SD cards or USB devices
   (d) User replaceable Batteries
   (e) DVD, Blu-ray or Recordable Discs
   (f) Video / Audio Heads from wear and tear in normal use
   (g) Information stored on Hard Disk Drive, USB stick or SD card
   (h) DTV reception issues caused by TV Aerial / Cabling / Wall socket(s)
   etc
5. Some products may be supplied with Ethernet connection hardware. The warranty is limited on such products and will not cover
   (a) Internet and or DLNA connection / setup related problems
   (b) Access fees and or charges incurred for internet connection
   (c) The use of incompatible software or software not specifically stipulated in the product operations manual; and
   (d) Any indirect or consequential costs associated with the incorrect use or misuse of the hardware, its connection to the internet or any other device.
6. To claim warranty service, when required, you should:
   - Telephone Panasonic's Customer Care Centre on 132600 or visit our website referred to below and use the Service Centre Locator for the name/address of the nearest Authorised Service Centre.
   - Send or take the product to a Panasonic Authorised Service Centre together with your proof of purchase receipt as a proof of purchase date. Please note that freight and insurance to and / or from your nearest Authorised Service Centre must be arranged by you.
   - Note that home or pick-up/delivery service is available for the following products in the major metropolitan areas of Australia or the normal operating areas of the nearest Authorised Service Centres:
     - Plasma/LCD televisions / displays (screen size greater than 103 cm)
7. The warranties hereby conferred do not extend to, and exclude, any costs associated with the installation, de-installation or re-installation of a product, including costs related to the mounting, de-mounting or remounting of any screen, (and any other ancillary activities), delivery, handling, freighting, transportation or insurance of the product or any part thereof or replacement of and do not extend to, and exclude, any damage or loss occurring by reason of, during, associated with, or related to such installation, de-installation, re-installation or transit.

Panasonic Authorised Service Centres are located in major metropolitan areas and most regional centres of Australia, however, coverage will vary dependant on product. For advice on exact Authorised Service Centre locations for your product, please telephone our Customer Care Centre on 132600 or visit our website and use the Service Centre Locator.

In addition to your rights under this warranty, Panasonic products come with consumer guarantees that cannot be excluded under the Australian Consumer Law. If there is a major failure with the product, you can reject the product and elect to have a refund or to have the product replaced or if you wish you may elect to keep the goods and be compensated for the drop in value of the goods. You are also entitled to have the product repaired or replaced if the product fails to be of acceptable quality and the failure does not amount to a major failure.

If there is a major failure in regard to the product which cannot be remedied then you must notify us within a reasonable period by contacting the Panasonic Customer Care Centre. If the failure in the product is not a major failure then Panasonic may choose to repair or replace the product and will do so in a reasonable period of time from receiving notice from you.

THIS WARRANTY CARD AND THE PURCHASE DOCKET (OR SIMILAR PROOF OF PURCHASE) SHOULD BE RETAINED BY THE CUSTOMER AT ALL TIMES

If you require assistance regarding warranty conditions or any other enquiries, please visit the **Panasonic Australia** website **www.panasonic.com.au** or contact by phone on **132 600**

If phoning in, please ensure you have your operating instructions available.

Panasonic Australia Pty. Limited

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Glossary

AVCHD
AVCHD is a new format (standard) for High Definition video cameras that can be used to record and play high-resolution HD images.

BD-J
Some BD-Video discs contain Java applications, and these applications are called BD-J. You can enjoy various interactive features in addition to playing normal video.

Bitstream
This is the digital form of multi-channel audio data (e.g., 5.1 channel) before it is decoded into its various channels.

DLNA (Digital Living Network Alliance)
DLNA is a standard that makes DLNA Certified digital electronics easier and more convenient to use on a home network.
This unit works both as a server and a client: You can enjoy the video and photos saved on the HDD of this unit on DLNA (Client) compatible equipment connected via a network. Additionally, You can enjoy viewing video, photos and music saved on a DLNA Certified media server and Panasonic DLNA compatible recorders.

Dolby Digital
This is a method of coding digital signals developed by Dolby Laboratories. Apart from stereo (2-channel) audio, these signals can also be multi-channel audio.

Dolby Digital Plus
Multi-channel audio and higher audio quality is made possible using Dolby Digital Plus. BD-Video supports up to 7.1 channel output.

Dolby TrueHD
Dolby TrueHD is a very high quality audio format that reproduces the studio master audio. BD-Video supports up to 7.1 channel output.

Down-mixing
This is the process of remixing the multi-channel audio found on some discs into fewer channels.

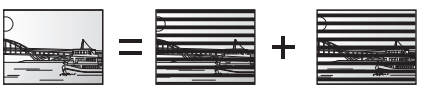
DTS (Digital Theater Systems)
This surround system is used in many movie theatres. There is good separation between the channels, so realistic sound effects are possible.

DTS-HD
DTS-HD is a high-quality, sophisticated audio format used in movie theatres. Previous DTS Digital Surround-compatible equipment can play DTS-HD as DTS Digital Surround audio. BD-Video supports up to 7.1 channel output.

Dynamic range
Dynamic range is the difference between the lowest level of sound that can be heard above the noise of the equipment and the highest level of sound before distortion occurs.
Dynamic range compression means reducing the gap between the loudest and softest sounds. This means you can listen at low volumes but still hear dialogue clearly.

Formatting
You can format SD cards and the HDD on this unit.
Formatting permanently deletes all contents.

Frames and fields
Frames refer to the single images that constitute the video you see on your TV. Each frame consists of two fields.



- A frame still shows two fields, so there may be some blurring, but picture quality is generally better.
- A field still shows less picture information so it may be rougher, but there is no blurring.

HDMI (High-Definition Multimedia Interface)
Unlike conventional connections, it transmits uncompressed digital video and audio signals on a single cable. This unit supports high-definition video output [720p (750p), 1080i (1125i), 1080p (1125p)] from HDMI AV OUT terminals. To enjoy high-definition video a High Definition compatible TV is required.

JPEG (Joint Photographic Experts Group)
This is a system used for compressing/decoding colour still pictures. If you select JPEG as the storage system on digital cameras, etc., the data will be compressed to 1/10–1/100 of its original size. The benefit of JPEG is less deterioration in picture quality considering the degree of compression.

Local storage
This storage area is used as a destination for sub contents for playing virtual packages on BD-Video.

LPCM (Linear PCM)
These are uncompressed digital signals, similar to those found on CDs.

MPEG2 (Moving Picture Experts Group)
A standard for efficiently compressing and expanding colour video. MPEG2 is a compression standard used for DVD and satellite based digital broadcasting.

MPEG-4 AVC/H.264
A standard for efficiently compressing and expanding colour video. MPEG-4 AVC/H.264 is an encoding method used for recording of the High Definition video.

MP3 (MPEG Audio Layer 3)
An audio compression method that compresses audio to approximately one tenth of its size without any considerable loss of audio quality.

Pan&Scan/Letterbox
In general, BD-Video and DVD-Video are produced with the intention that they be viewed on a widescreen TV (16:9 aspect ratio), so images often don't fit regular (4:3 aspect ratio) TVs. Two styles of picture, "Pan & Scan" and "Letterbox", deal with this problem.

Pan & Scan: The sides are cut off so the picture fills the screen.

Letterbox: Black bands appear at the top and bottom of the picture so the picture itself appears in an aspect ratio of 16:9.

Progressive/Interlace
Interlace is a conventional image signal that displays the image in 2 phases by splitting the display into odd and even scans.
Progressive will display whole image in 1 scan. Therefore, it will give High Definition image without flickering compared with interlace.

Protection
You can prevent accidental deletion by setting writing protection or deletion protection.

Sampling frequency
Sampling is the process of converting the heights of sound wave (analog signal) samples taken at set periods into digits (digital encoding). Sampling frequency is the number of samples taken per second, so larger numbers mean more faithful reproduction of the original sound.

Signal Quality
This is the guide for checking the aerial direction. The numbered values displayed do not indicate the strength of the signal, but the quality of the signal (the signal to noise ratio, or "S/N"). The channels you can receive are affected by weather conditions, seasons, time (day/night), region, length of the cable that is connected to the aerial, etc.

Thumbnail
This refers to a miniature representation of a picture used to display multiple pictures in the form of a list.

1080i
In one High Definition image, 1080 (1125) alternating scan lines pass every 1/50th of a second to create an interlace image. Because 1080i (1125i) more than doubles current TV broadcasts of 480i (525i), the detail is much clearer and creates a more realistic and rich image.

1080p
In one High Definition image, 1080 (1125) scan lines pass at the same time every 1/50th of a second to create a progressive image. Since progressive video does not alternate scan lines like interlace, there is a minimal amount of screen flicker.

24p
This is a progressive image recorded at a rate of 24 frames per second.

720p
In one High Definition image, 720 (750) scan lines pass at the same time every 1/50th of a second to create a progressive image. Since progressive video does not alternate scan lines like interlace, there is a minimal amount of screen flicker.

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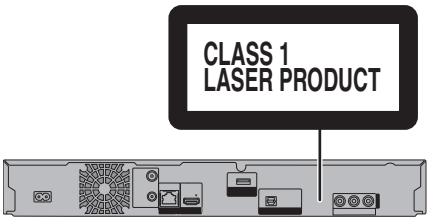

(Inside of product)

-If you see this symbol-

Information on Disposal in other Countries outside the European Union

This symbol is only valid in the European Union. If you wish to discard this product, please contact your local authorities or dealer and ask for the correct method of disposal.

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